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ASSESSMENT OF THE
PRINCE EDWARD ISLAND ECONOMY
IN THE EARLY 1980s

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FOREWORD

During the summer of 1983, the Atlantic Provinces Economic Council was invited to participate in a Federal/Provincial assessment of the economy of Prince Edward Island. APEC accepted the assignment of preparing the final summary document based on a series of studies which were commissioned and directed by joint Federal/Provincial steering and working committees comprising representatives from the Prince Edward Island Cabinet Office and the Ministry of State for Economic and Regional Development.

This report is the culmination of APEC's role of analyzing and summarizing the many studies which were provided. Although we have used our best efforts to confirm the information contained in the studies, time constraints dictated that we accept most material as presented to us. We were, however, allowed considerable latitude in expressing our independent ideas and thoughts.

This assignment has proven to be both challenging and interesting. We appreciate the efforts of the steering and working committees in providing us with guidance as well as responding to our numerous requests for information.

We hope this report will prove useful in the planning activities to guide the Prince Edward Island economy in the years to come.

Elizabeth Beale
Maurice Mandale

Atlantic Provinces Economic Council
March 1984

INTRODUCTION AND EXECUTIVE SUMMARY

This assessment of the Prince Edward Island economy in the early 1980s establishes a foundation for a provincial development initiative to succeed the Comprehensive Development Plan. It analyzes trends in the provincial economy over the past decade or two, and outlines a series of challenges, opportunities, and constraints for the coming years. The way that provincial and federal intiatives deal with the challenges will dictate much of the Island's economic development over the balance of the century.

Prince Edward Island is the smallest part of Canada, with an economy based on agricultural and fishery production and processing, a fairly diversified but small-scale manufacturing sector, and a series of service industries which dominate the total value of the province's gross domestic product. Tourism overlaps most other parts of the economy. Since the early 1960s, direct and indirect government spending, both in transfers to other governments or to individuals, have assumed a more and more important role in Prince Edward Island.

Relative economic prosperity during the 1970s can be traced to two roots. Firstly, there were solid performances by the province's farmers and fishermen, and by the tourist industry. For the first two of these, there were also related processing activities, but by and large, new manufacturing endeavours in the 1970s did not fare well. Secondly, direct spending under the Comprehensive Development Plan peaked in mid-decade, particularly as new schools and other government buildings were erected. The pace of construction activity associated with this peak was not sustained into the 1980s.

In 1984, therefore, the structure of the Prince Edward Island economy is not broadly different from in 1961. Island industries are rather unfortunately characterized by low wages, low productivity, seasonality of employment, low investment per worker, and low skill levels.

The future, however, appears much brighter, as a crossroads for Island development initiatives coincides with fundamental change in industrial structure of advanced, western economies. Principal challenges to be overcome in the provincial economy include low productivity, an undiversified economic base, an over-reliance on public spending, and generally under-skilled labour force.

Although there are opportunities facing all individual sectors, two general sets face all parts of the Island economy, more or less. Firstly, the province must concentrate on its most valuable resource, human energy. A process of offering all Islanders an increased range of employment and entrepreneurial alternatives should inject a degree of initiative and innovation into the provincial economy not fully realized in the past or at present.

Secondly, more highly skilled workers and entrepreneurs should be offered the choice of remaining on the Island to work. Arguably, Prince Edward Island is in a better position to stimulate industrial development in the mid-1980s than at any other time so far in this century, by mobilizing larger economic trends in its favour. Substantially, this involves taking advantage of recent technological and scientific progress, both as it applies to traditional and new industries. New technologies offer the scope for decentralizing much industry to smaller, less location-sensitive production units which marks an important reversal of the trends towards bigger, more centralized plants of recent decades. The opportunities include the establishment of research and development programs in Prince Edward Island (particularly for agriculture and fishery-oriented biotechnology and research), and so-called information industries. Establishment of such institutions as the new Veterinary College and the Department of Veterans' Affairs headquarters will help these and other developments.

All established sectors of economic activity, of course, must strive to improve their competitiveness and expand markets. There are bright opportunities for agriculture, the fishery, tourism, and parts of the service sector. All must overcome constraints posed by existing economic structures, and particularly high costs of electricity, and difficulties of transportation.

Prince Edward Island is the smallest province in Canada and is, therefore, subject to particularly overwhelming external influences. Larger economic, financial, and monetary policies and determinants are substantially decided elsewhere in the world. Although industrial development is a most important part of Island endeavours, the province should not lose sight of the fact that it forms part of a global marketplace which dictates, to a large extent, the fortunes of its economy. This should not be regarded as a disadvantage, but as a great challenge to achieve growth and social progress, and to maintain a highly-regarded system of community values.

1. PRINCIPAL ECONOMIC INDICATORS

1.1 POPULATION

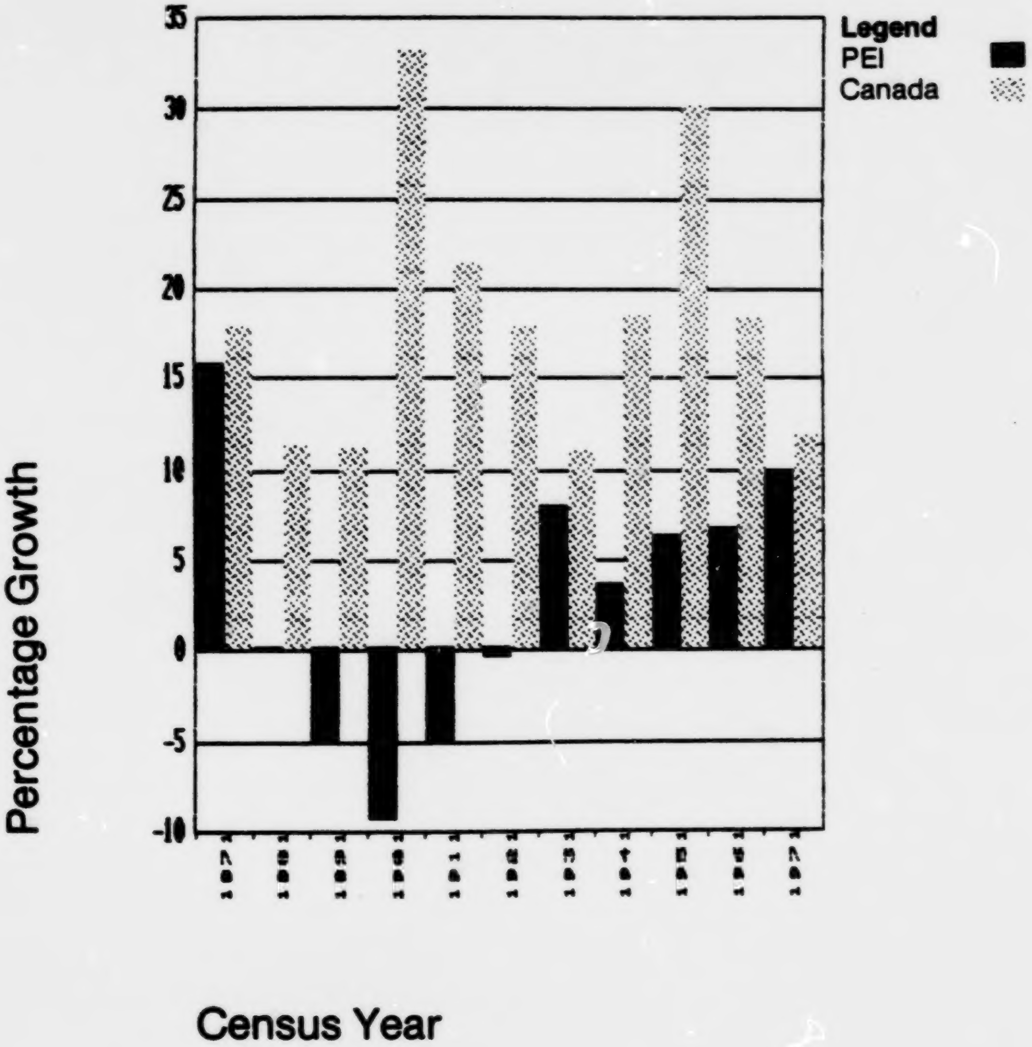
Prince Edward Island has been Canada's smallest province, both in terms of area and population since it joined Confederation in 1873. Indeed, the province's relative size has declined more or less constantly as both the national territory and population have grown. In 1981, Prince Edward Island accounted for 0.5% of the national total population compared to about 2.5% in 1871 (a time when the Canadian nation covered a much smaller territory) and 0.7% in 1951. The Island's small size pervades most aspects of its economic life; there is a correspondingly small domestic market, the province's costs of government are spread among relatively fewer people, and economies of scale are difficult to achieve.

Population Growth, Migration, and Age Structure

In general, Prince Edward Island has not shared in the growth of population in Canada which occurred between 1961 and 1981. Annual average rate of population growth in Canada over these two decades was 1.5% compared to 0.8% on the Island. This lack of growth at the provincial level has mainly been due to extensive emigration to other parts of North America to find work. This phenomenon gathered pace in the first three decades of this century, was arrested and reversed as economic opportunity everywhere declined in the 1920s and 1930s, but resumed during the 1950s and 1960s. During the years since 1945, however, substantial emigration has been more than offset by the high rate of natural population increase associated with the baby boom.

Rates of Inter-Censal Population Growth
Prince Edward Island and Canada 1871-1981

Source: Censuses of Canada



These movements and trends within the total population of Prince Edward Island have some significant effects on the structure of the present population. Firstly, the proportions of people in the so-called prime-aged groups (25-44) are relatively small. People of these ages have been more likely to leave to find work elsewhere.

Secondly, in most censuses since World War II, children aged less than 15 years have accounted for as much as one-third or more of the Prince Edward Island total population, and have composed a consistently higher proportion of total population provincially than nationally. Although this proportion has dropped quite significantly in 1981 (to about one-quarter), the special circumstances surrounding this "bulge" of people persist, as they have reached working age and have entered the labour market in search of jobs.

Thirdly, the proportion of Islanders aged 65 and over has usually been higher than the national average, and is slowly increasing. In 1961, for example, more than 10% of Islanders were aged 65 or over (compared to less than 8% nationally); by 1981, these respective proportions had increased to 12.2% and 9.7%.

There are three major implications of these, and other, structural changes in the Island's population:

a) Emigrants have overwhelmingly been from the most productive and innovative age groups, thus arguably depriving the Island of badly-needed initiative and entrepreneurial skills, and reducing the revenue-resource base available to provincial authorities. This has been aggravated further by a lack of immigrants as few job opportunities were perceived on the Island;

b) As members of the baby boom have reached the late teens, there has been a great increase in the supply of labour, which has not entirely been met by a corresponding increase in the supply of jobs on the Island. This is likely to continue as the later cohorts of the baby boom (born during the decade 1965-1975) reach working age;

c) A relatively large younger population, and an increasing number of Islanders in older age groups have meant more demand for social services such as health and education.

Emigration from Prince Edward Island was sufficient for many years to outweigh immigration, and net losses of population by migration persisted in almost every post-war year up to 1970. For most of the 1970s, however, more people came to live on the Island than left it; by these means between 1971 and 1976, Prince Edward Island gained 2,400 people. Late in the decade, however, emigration once again began to outweigh immigration as better years of the early and mid-1970s were replaced once again by economic uncertainty.

Population Density and Distribution

If the Island is the smallest province in terms of total population, it is still the most densely settled. A population density in 1981 of 21.6 persons/km^2 is almost 10 times the national average density (2.6 persons/km^2). Prince Edward Island also stands out as being the most rural of the provinces, with 64% of its population classified by the 1981 census as living in rural areas. This compares to about one-quarter of all Canadians being rural dwellers.

The census classification of "urban" and "rural", however, is rather general. The "urban" population only includes people within the limits of the City of Charlottetown and the Town of Summerside. Inclusion of adjacent urbanized areas around each of these urban centres gives a rural:urban split in 1981 of about 50:50.

Even though it remains the most rural province, urbanization has not by-passed the Island. The province in the early 1980s is much more urban-oriented than in previous years. Indeed, the size of the Island, and a relatively dense network of roads, makes it easier to combine a rural dwelling with accepted urban amenities than in larger provinces. The gradual urbanization of the Island is demonstrated by census data: In 1961, Queen's County (which includes Charlottetown) accounted for 44% of the Island's people. By 1981, the county included almost half of the provincial population. This also reflects the relative dominance of Charlottetown itself, a dominance which has increased during the 1960s and the 1970s.

Population: Summary

The main points in population growth on the Island from 1961 to 1981 can be summarized as:

- The province's population grew at about half the annual average rate of the nation's population, although growth in Queen's County (mostly in and around Charlottetown) approached the national average.

- The province's population remains almost two-thirds rural in nature, although the small areal size of the Island means most residents have easy access to urban amenities.

- There are relatively higher proportions of people in the younger (under 15) and older (65 and over) age groups than the national averages, and the former of these has been declining relatively while the latter has been growing.

- Many prime-aged people (usually the most innovative and productive segments of the total population) left the Island to seek work and settle elsewhere during the 1950s and 1960s.

SELECTED POPULATION STATISTICS
PRINCE EDWARD ISLAND, 1961 AND 1981

	1961	1981	Annual Average Change 1961-1981
Total population	104,629 (100.0%)	122,505 (100.0%)	0.8%
King's County	17,893 (17.1%)	19,215 (15.7%)	0.3%
Prince County	40,894 (39.1%)	42,820 (35.0%)	0.2%
Queen's County	45,842 (43.8%)	60,470 (49.4%)	1.4%
Province as % of Canadian Population	0.6%	0.5%	
Rural Population:			
P.E.I.	67.7%	63.7%	
Canada	30.4%	24.3%	
Age-Groups			
Less Than 15:			
P.E.I.	36.0%	24.8%	
Canada	34.0%	22.5%	
15-64:			
P.E.I.	53.6%	63.0%	
Canada	58.4%	67.8%	
65 or over:			
P.E.I.	10.4%	12.2%	
Canada	7.6%	9.7%	

Source: Censuses of Canada, 1961 and 1981.

1.2 LABOUR FORCE DEVELOPMENTS

Quantity and quality of human resources are important determinants of economic development. As already noted in the previous section on Prince Edward Island's population, the province has been a net exporter of labour. During this process, the quality of the labour force has probably suffered much more than the actual movement of people indicates as emigration has tended to claim the more productive, innovative, and highly trained workers who are both more likely to move elsewhere to find work or better their lot, and more likely to be able to find work elsewhere because of accumulated skills and experience.

Size and Growth of the Labour Force In Prince Edward Island

The actual size of the labour force at any one time depends on:

a) number of people aged 15 or over;

b) the proportion of those people who wish to work.

As with all demographic data, the post-war baby boom has strongly influenced labour force developments in Prince Edward Island. In 1961 (a year when the first products of the baby boom would reach 15 years old and therefore be eligible for the labour force) there were about 67,000 Islanders aged 15 or over, or about 64% of the total population; the comparative proportion for Canada was 66%. By 1981, after 20 years of "baby-boomers" reaching labour-force age, there were about 92,000 Islanders aged 15 or over, or 75% of the total Island population. Many of the first recruits (in the early 1960s) had, furthermore, moved into the so-called prime-age categories aged between 25 and 44 years.

These prime-age workers in Prince Edward Island have taken up an increasing share of the active labour force over the past two decades to the extent of accounting for almost half of all workers either with jobs or actively looking for work.

Actual participation in the labour force is more than a function of the numbers of people aged 15 and over. It is also closely and naturally related to availability of jobs, individual and family attitudes and aspirations, and a variety of social developments such as the numbers of women working, or the numbers of single parents in a society.

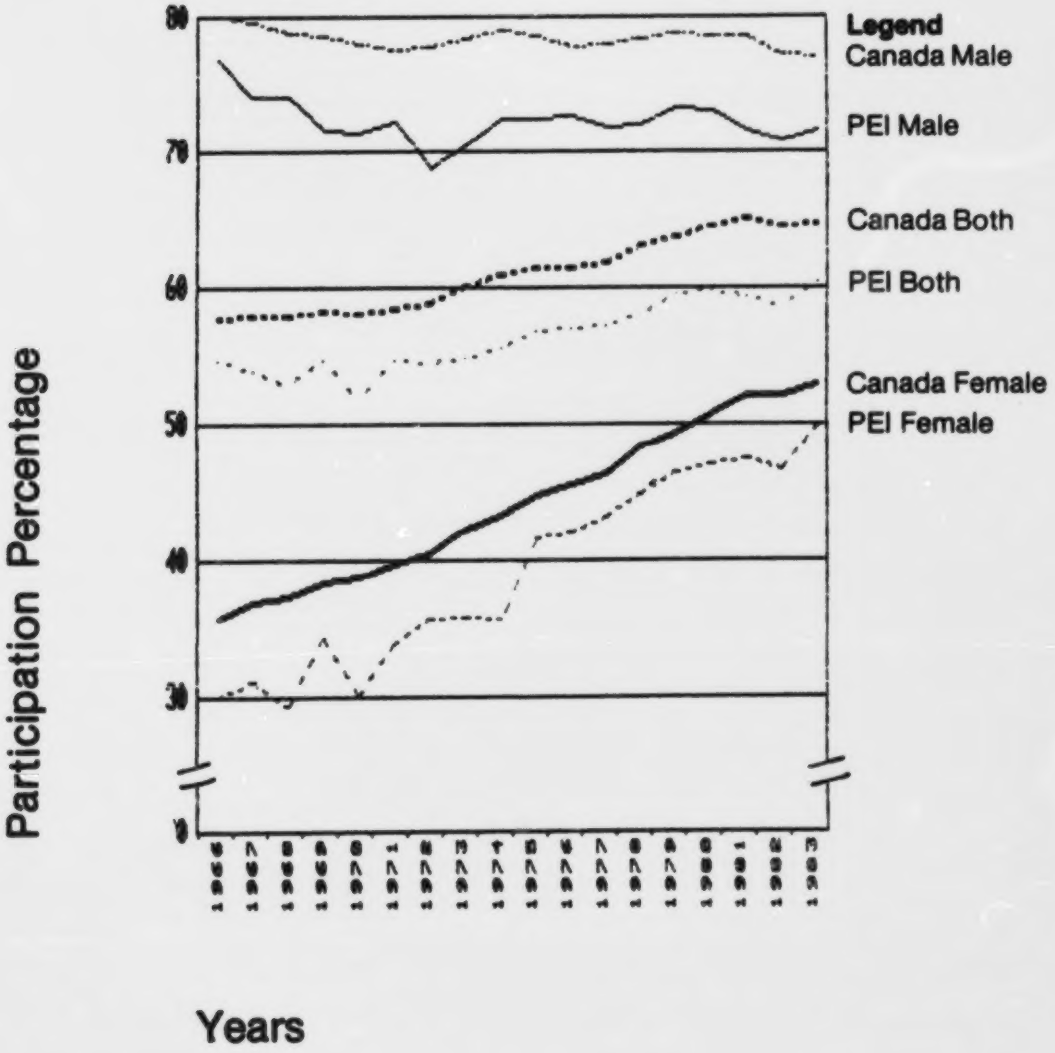
Participation Rates

Participation rates in Prince Edward Island (which measure the population of those aged 15 or over who are active in the labour force at a given time) summarize these various trends. At both national and provincial levels, the total participation rate has increased since the mid-1960s, but the provincial rate is rather more erratic in its upward trend, and has remained rather below the national average as employment opportunities at the provincial level have been fewer than at the national level. The erratic behaviour of participation rates in Prince Edward Island reflect at least two factors. Firstly, the rates are based on a much smaller statistical base and are, therefore, likely to fluctuate more widely. Secondly, a relatively narrowly resource-based economy such as that of the Island is more prone to greater year-to-year swings in economic activity.

Participation rate trends encompass several other important developments. Firstly, the participation rate for males has declined slightly since 1966, although it has been relatively stable since 1974. Secondly, the participation rate for females

Labour Force Participation Rates
Prince Edward Island and Canada 1966-1982

Source: Statistics Canada Catalogue 71-201



has increased significantly since 1966, with most of the increase occurring since 1970. This increase in the female participation rate has been more than sufficient to compensate for the marginal decline in the male rate, to give a net increase in total participation rates from 1966 to 1982.

Employment Trends

Given that the size of the Island labour force has been increasing since the 1960s, both as the population 15 and over has grown, and as the proportion of this population active in the labour market has increased, the record of job creation has been quite impressive over most of this period. Some 48,000 Islanders were employed in 1981 compared to 35,000 in 1966, representing an annual average growth rate of 2.1%; this growth rate, however, was less than the 2.8% national average rate of growth over the same period.

Unemployment Trends

This rate of growth in jobs, unfortunately, has not been quite as rapid as the rate of growth in the labour force. This means that unemployment has grown over time. In 1972, for example, 10.8% of the Island labour force was classified as being unemployed. This declined to less than 10% for most of the balance of the 1970s, but increased from 9.9% in 1978 to a peak of between 15% and 16% in mid-1982 before retreating slightly by the end of 1983 to a little over 12%. This last figure represents about 7,000 Islanders without work as measured by official statistics, but this understates the actual extent of unemployment quite considerably.

A participation rate which is lower than the national average indicates a degree of "hidden" unemployment not measured by official statistics, and may reflect the so-called "discouraged worker" effect; this affects people who would like to work, but who perceive no imminent job opportunities, and, therefore, do not participate in the labour force.

The recession of 1981-1982 has underlined the gravity of the unemployment problem across Canada, and particularly in the Atlantic region. At the national level, more than 60% of the jobs lost during the recession had been recovered by the end of 1983, but many of these were in part-time, rather than full-time, positions.

Unemployment: Some Characteristics

Unemployment in Prince Edward Island broadly follows the national trend, but with two important qualifications. Firstly, Island unemployment in general has tended to exceed national rates, but freqently dips below the national rate subsequent to, for example, a good potato harvest or a strong year for tourism. Secondly, seasonal patterns of employment and unemployment are much more evident throughout the Atlantic region, linked mainly to seasonal industries where performance is dictated mainly by climatic factors. In Prince Edward Island this affects three principal goods-producing industries (agriculture, the fishery, and construction, plus related industries) and tourism.

The high unemployment on the Island reflects structural, seasonal and cyclical factors. The movement away from agricultural employment during the 1960s and 1970s released labour which, for some of this time, was absorbed fairly quickly by expanding construction and service industries. But many of the new non-agricultural jobs were and continue to be seasonal. Thus, unemployment rates are high during winter months. As overall job creation slowed markedly at the end of the 1970s, participation rates continued to rise. This put further upward pressure on unemployment rates.

Because of the static nature of labour force data, little is known about the dynamic nature of unemployment. Is the experience of unemployment in some way distributed across the population, or is it concentrated in a small minority? The strongly seasonal nature of much of the unemployment in Prince Edward Island would suggest that the experience of unemployment is fairly widespread, although it must also be acknowledged that there are certain groups in the labour force, such as younger people, for whom the incidence and duration of unemployment is much greater than others.

Periodic employment also affects the two sexes in Prince Edward Island in different ways. Relatively more males work at seasonal jobs such as in agriculture, fishing, and construction. Unemployment benefit claims by all males on the Island show marked seasonal swings as a result, but it is more likely that many of these jobs will return the following year. Females are more concentrated in year-round jobs such as teaching, health services, offices, and stores. Although seasonal patterns are not as evident in these professions, jobs lost are less likely to be regained as quickly or predictably.

Data from the 1971 and 1981 censuses support the view that male employment in the Province has become more short term. Higher proportions of males worked for less than six months in 1981 than in 1971, while lower proportions worked all year round. More females also worked for less than six months in 1981 compared to

1971, but more also worked full time over the ten year period. More new jobs for both sexes over the 10 years were part-year, especially for males engaged in fishing and construction. By far, the largest proportion of full-time new jobs for women came in clerical and related occupations, and for men in management and administrative occupations.

A high degree of seasonal employment patterns suggest that unemployment may typically be quite short-term on the Island, although this certainly has not insulated the Island workforce from structural unemployment; in neither 1982 nor 1983 did the unemployment rate fall below 10% during the summer months. There are also substantial remnants in Prince Edward Island of a seasonal rotation between different occupations when, for example, the same person may fish for lobster and do some agricultural work in spring, summer, and fall, and work in the woods in winter time.

Although accepted by many Islanders as a way of life, less-than-permanent employment severely inhibits development and accumulation of skills which in turn deter improvements in productivity and keeps wage levels quite low; the average weekly wage in Prince Edward Island in late 1983 was the lowest in Canada by a sustantial margin, and stood at only 80% of the national average.

One final aspect concerns "hidden emplqyment". Like its converse, hidden unemployment, there are few official measures of hidden employment, but is usually associated with the so-called unofficial or underground economy. This is believed to be particularly important in depressed areas, and probably prevails quite widely in Prince Edward Island. It is characterized by barter transactions, or by cash transactions (including payment for work) which go unrecorded by authorities. Although the true extent of this unofficial economy is almost impossible to determine, there is little doubt that it is a force to be reckoned with in the provincial economy.

Structural Changes in the Prince Edward Island Labour Force

Structural changes in the Prince Edward Island labour force can be illustrated by reference to census data. Several facts stand out:

- Between 1961 and 1981, the proportion of the workforce employed in primary agricultural production went down from 27% to 10%.
- Over the same period, the proportion employed in the other major goods-producing sectors (manufacturing and construction) went up from 15% to 18%.
- The proportion of the labour force employed in community, business, and personal services increased from 17% in 1961 to 28% in 1981.
- Other parts of the service sector either maintained their relative shares of all jobs over the two decades (trade, for example, with 14% of the labour force in each year), or usually increased their shares (for example, finance and public administration). Only transportation's share declined over the 20 years.
- Most sectors, except agriculture, registered substantial increases in terms of actual jobs between 1961 and 1981. In the case of community, business, and personal services, this amounted to almost 10,000 new jobs over

the 20 years to become by far the single biggest sector in terms of employment.

- The labour force in goods-producing industries grew at an average annual rate of 0.18% between 1961 and 1981, compared to a rate of 3.35% for service industries. In 1981, service industries accounted for 66% of the total labour force compared to a little over 50% in 1961.

Quality of Labour Force

The quality of labour depends on education levels, skill training, and occupational experience. It affects productivity and labour income.

Islanders in the early 1980s are better educated than in earlier years, with 69%, for example, having high school greater than grade 9 in 1981 compared to 59% in 1971. These proportions are only slightly lower than the national average. In 1981, as well, there were 45 university graduates per thousand Islanders, compared to 61 per thousand nationally. Comparable figures for 1971 were 23 and 33 per thousand respectively.

There are also more Islanders with vocational training in the early 1980s, and enrollment in Community College has remained consistently high. Enrollment at Holland College has shown a distinct swing towards technological training. Other post-secondary training available includes adult occupational training, management training and apprenticeship training.

There is a problem in providing good facilities for skill training in Prince Edward Island: There is no guarantee that the people who undertake this training will stay on the Island to work, especially if there is a limited capacity for Island industries to employ these new skills, and if wages offered by off-Island industries are more attractive. Therefore, while the training programs are usually subsidized at least partially by the provincial government, the full benefits may not necessarily accrue to the province unless there is a concerted effort to connect skill-training to attracting new industries.

Prince Edward Island Occupational Structure

Changes in the proportion of the Island labour force by occupation reflect the basic changes in the industrial structure of the province. There are much fewer farmers in 1981 compared to earlier years, and there have been big increases in the numbers of service-related occupations. There are noticeable gaps in such occupations as managerial, natural science, machining, and product fabrication, when compared to the national average.

In general, there tend to be more low-paying occupations in the Island labour force than nationally. About 40% of all occupations are in farming, fishing, processing, services, and transport equipment sectors compared to 24% nationally. Required skills in these sectors are noticeably lower than in many other industries, although this does not reflect any lack of aptitude on the part of Islanders.

The Island Labour Force: Summary

- As the population eligible for participation in the Prince Edward Island labour force increased in the 1960s and 1970s, so did actual participation in the labour force as the products of the baby boom, especially females, looked for work.

- Many more jobs were also created to absorb much of the newly enlarged labour force.

- Job creation began to falter towards the end of the 1970s, with the result that rising unemployment began to characterize the Island economy. It may be, however, that the unemployment is substantially due to seasonal or periodic work patterns so can be of quite short and predictable duration. Such patterns, however, inhibit skill development and labour income.

- Structural changes in the Island labour force have seen workers move from primary production particularly to service provision.

- The quality of the Prince Edward Island labour force has been increasing over the past two decades, but an emphasis on certain types of sectors, such as primary production, processing, tourism, and service industries, mean more lower-paying occupations than nationally.

SELECTED LABOUR FORCE STATISTICS
PRINCE EDWARD ISLAND AND CANADA
1966-1981

	1966		1981
Population 15 years and older	70,902		92,085
as % of total population:			
P.E.I.	65.3%		75.2%
Canada	67.1%		77.5%
Labour Force	37,000		54,000
Annual Average Growth in			
Labour Force: P.E.I.		2.6%	
Canada		3.1%	
Participation Rates:			
Male: P.E.I.	76.5%		71.4%
Canada	79.8%		78.3%
Female: P.E.I.	29.7%		47.2%
Canada	35.4%		51.6%
Both Sexes:			
P.E.I.	54.3%		58.3%
Canada	57.3%		64.7%
Employment P.E.I.	35,000		48,000
Annual Average Growth in			
Employment: P.E.I.		2.1%	
Canada		2.8%	
Unemployment Rate			
P.E.I.	n/a		11.4%
Canada	3.4%		7.6%

Sources: Census of Canada 1966 and 1981
Statistics Canada Catalogue 71-201

1.3 GROSS DOMESTIC PRODUCT

The Canadian gross national product (gnp) grew rapidly during the 1960s, slightly less rapidly up to the mid-1970s, much more slowly in the late 1970s, and actually declined slightly over the first three years of the 1980s. Roughly comparable figures for gross domestic product (gdp) in Prince Edward Island exhibit the same rough trend of growth, but vary somewhat from national patterns in terms of timing. There was middling growth during the 1960s (slower than the national rate) which accelerated through the 1970s (to rather faster than the national rate), before registering a 1% annual decline between 1980 and 1982. Indeed, the 5% annual average growth in gdp throughout the 1970s on the Island was third only to growth in Alberta (6.8%) and British Columbia (5.3%).

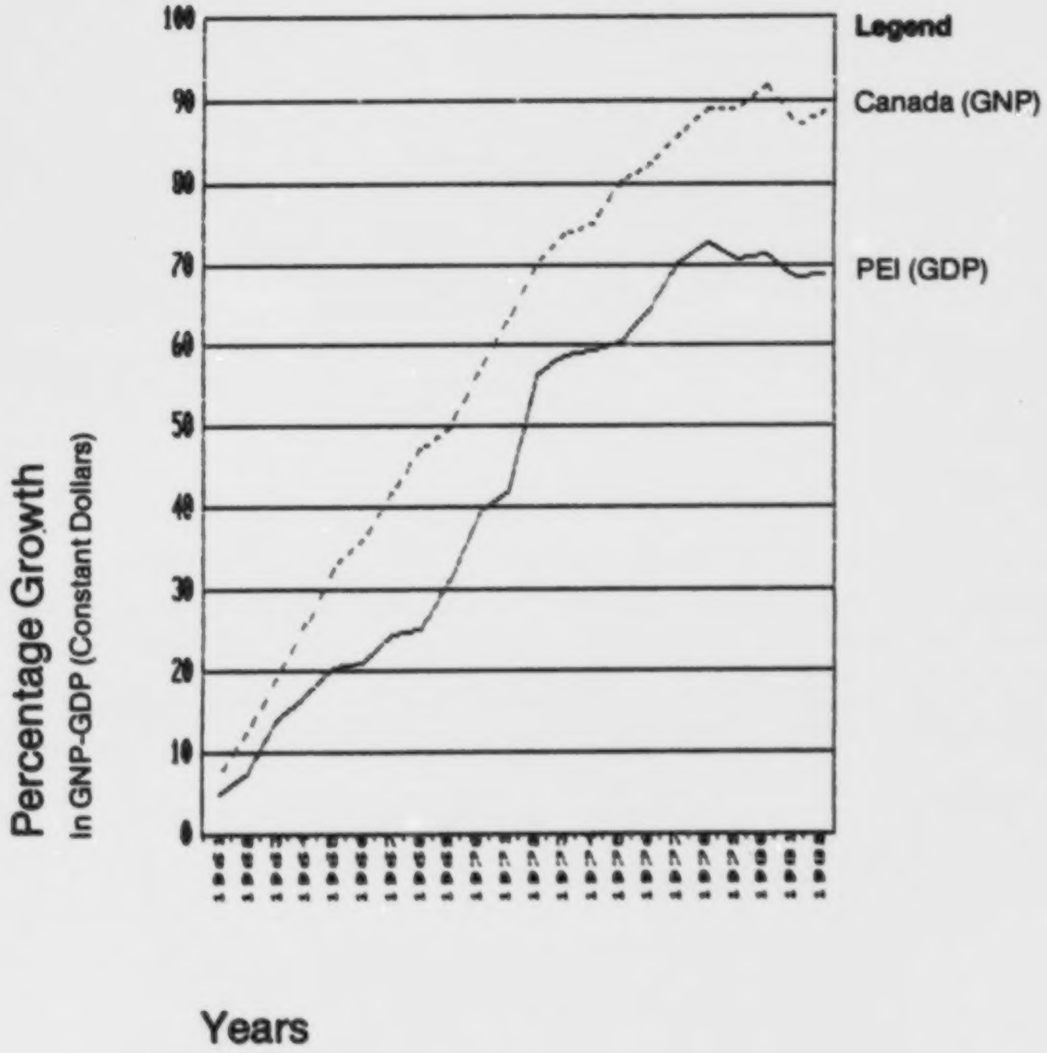
Year-to-year growth in the Island's gdp has been more erratic than nationally. This is due to the narrower base of the provincial economy. For example, a handsome increase in gdp in 1973 (14.5% in real terms) came on the heels of good performances in two of the province's four principal goods-producing sectors, construction and agriculture. (The latter of these saw a first-class year for potato prices.) Similar out-of-the-ordinary increases over the 22 years since 1961 can be traced to better-than-average performances in one or other of the major sectors. Conversely, too much dependence on a few industries imparts a certain vulnerability to the Island's economic growth.

Performance By Sector

The spectacular growth of the service sector in Prince Edward Island since the early 1960s in terms of employment has already

Cumulative Percent Real Growth in Gross National Product (Canada) and Gross Domestic Product (Prince Edward Island) 1961-1983

Source: Conference Board of Canada



been noted. The growth in value of services in the Island economy has also been impressive, and has grown at an annual average rate of 3.7% since 1961. (All growth figures in this sector are adjusted for inflation.) The fastest growth was during the 1970s with particularly rapid expansion by the trade, and public administration and defence sectors. Community, personal, and business services did well in the 1960s, and also maintained a healthy rate of expansion in the 1970s. Most service sectors suffered setbacks during the early 1980s; the trade sector, for example, declined by 6.4% on average each year from 1980 to 1982.

Goods-producing sectors also performed creditably between 1961 and 1981, increasing their value of output by 3.5% annually on average. There was strong growth in manufacturing during the 1960s (7.6% annually) and even this was exceeded at the end of the 1970s, however, as the rate of growth was almost 14% annually for 1976 to 1979. Construction did well during the 1970s, but this may have been rather inflated as extensive school-building occurred under the Comprehensive Development Plan. Value of primary production for agriculture and the fishery has expanded quite solidly, although production from both sectors is much more subject to uncontrollable swings in volume and prices from year to year. Unlike manufacturing and construction, however, both agriculture and the fishery sustained their positive growth into the early years of the 1980s, at least in terms of primary production.

There has been little change in the structure of the Island economy since 1961. Throughout the two decades the gdp is split between service and goods-producing sectors, roughly 70:30. Agriculture and fishing have, in rather erratic ways, increased their total share of the Island's gdp, and manufacturing registered more solid and consistent growth in its share.

COMPONENTS OF GROSS DOMESTIC PRODUCT (PRINCE EDWARD ISLAND) AND GROSS NATIONAL PRODUCT (CANADA) 1961, 1966, 1971, 1976, AND 1981

	1961		1966		1971		1976		1981	
	P.E.I.	CAN.	P.E.I.	CAN.	P.E.I.	CAN.	P.E.I.	CAN.	P.E.I .	CAN.
				- PER CENT OF TOTAL -						
Agriculture	8.8	3.8	8.8	3.9	6.4	3.2	7.0	2.8	11.0	2.7
Forestry	0.0	0.9	0.0	0.9	0.0	0.8	0.0	0.7	0.0	0.7
Fishing	3.8	0.3	3.1	0.2	3.0	0.2	1.1	0.1	4.6	0.1
Mining	0.0	3.7	0.0	3.6	0.0	3.8	0.0	3.1	0.0	2.7
Manufacturing	5.0	21.6	6.7	23.5	7.7	22.9	7.4	22.3	7.9	21.9
Construction	10.7	7.7	11.3	7.8	9.9	7.0	7.4	6.7	5.8	6.1
Utilities	1.3	2.2	1.5	2.2	2.6	2.6	3.2	3.0	1.8	3.3
All Goods Production	30.2	40.2	31.4	42.1	29.6	40.5	26.1	38.7	29.0	37.4
Transportation and Communication	11.3	8.7	10.8	8.7	10.7	9.5	9.2	9.9	9.1	10.9
Trade	12.6	11.9	13.9	11.9	13.7	11.8	15.5	12.8	13.7	12.3
Finance, Insurance and Real Estate	12.6	12.5	11.9	11.4	11.2	11.5	12.7	12.1	14.0	13.0
Community, Personal and Business Services	13.2	17.9	13.9	18.2	15.5	19.3	14.8	19.4	14.0	20.0
Public Administration and Defence	21.4	9.6	17.5	7.7	18.9	7.4	21.8	7.2	20.4	6.8
All Services	71.1	60.6	68.6	57.9	70.0	59.5	73.9	61.4	71.0	62.6
All Industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Conference Board of Canada

Construction has declined in this respect, although some of the movement in its share of gdp must be attributed to wider cyclical factors.

Public administration and defence is the biggest single sector, accounting for about one-fifth of gdp in 1981, a little less than in 1961. Community, personal and business services increased their share up to the early 1970s before losing some of the ground gained to 1981. Finance, insurance, and real estate lost ground to 1971 before regaining its 1961 share by 1976, and then recovering to surpass this share by 1981. Trade exhibited a similar pattern, although an early peak in 1976 had not been exceeded by 1981. Trade is particularly sensitive to cyclical swings.

Compared to Canada as a whole, Prince Edward Island's service industries are more dominant in relative shares of total economic output. The Canadian gnp between 1961 and 1981 was divided roughly 60:40 between service and goods-producing sectors, with goods production losing ground in the years after 1966. This differential between nation and province is due to two main structural features:

a) Manufacturing is substantially more important, in proportional terms, at the national level than in Prince Edward Island;

b) Public administration and defence is substantially more important, in proportional terms, at the provincial level than at the national level.

Other sectors diverge when the two levels of economic activity are compared. Agriculture, the fishery, and construction are relatively more important at the provincial level (except for construction on the Island in 1981, when the sector dipped to very low levels of value of output). Up to the mid-1970s, transportation and communication services were relatively more important in Prince Edward Island, but this situation has been reversed since then. And community, business, and personal services have increased their share of Canada's gnp more rapidly, to the extent that this one service sector nationally now threatens manufacturing as the single biggest component of gnp. Another part of the service sector, public administration and defence, has already achieved this distinction in Prince Edward Island.

Exports and Imports

Consumer, government, and business spending in Prince Edward Island in 1981 was almost $1.3 billion, compared to a provincial gdp of $878 million. This negative "balance of trade" is further underlined by consideration of limited data on movement of products to and from Prince Edward Island. Wholesale merchants in the province in 1979 acquired only 37% of their goods from local sources. More self-reliant provinces, such as Quebec and Ontario, obtained more than 60% of wholesale stocks from within their own bounds. (This deals only with movement of wholesale items; it is rather difficult to generalize about the place of actual goods production.)

Total value of exports from the province in 1979 was estimated at $195 million, with about 73% of this total being shipped within Canada, the balance to foreign markets. These proportions will vary as global demand for the Island's principal export commodities (agricultural and fish products) tends to be rather sensitive; a poor potato harvest in Ontario or Europe, for example, will give a boost to demand for Island potatoes.

Since the 1970s, exports to foreign markets have improved. Total value of exports in 1980 was about $72 million, but this improved to $103 million by 1982. The food, feed, beverages, and tobacco commodity group accounted for about nine-tenths of these exports, mostly potatoes, dairy products, and fish products. These same commodities also dominate the Island's trade with other parts of Canada, with the other three Atlantic provinces (particularly Newfoundland), and Ontario containing the most important markets.

Prince Edward Island's very limited domestic market dictates that markets must be found elsewhere to sustain a reasonable degree of growth and progress. Trade in the principal Island products has been a little more vulnerable to wider swings in economic circumstances. Island exports tend to be quite low in value relative to the higher value of major imports to the Island, and the prices of the exports are largely determined by factors beyond control of the province's businessmen.

Output Per Person

Output per person in 1961 (based on gdp measurements) was $1,147, or about 49% of the Canadian average. Although there was a substantial improvement in absolute terms by 1981 ($6,800 per person, in nominal terms, or an annual average growth rate of 9.3%) the Island's value of output per person was still only about 51% of the national average. There was a slight improvement vis-a-vis national averages towards the end of the 1970s, but this evaporated with the slower economic pace of the early 1980s.

Output per employed person (a rather imprecise measure of productivity) indicates that Prince Edward Island gradually improved its record throughout the 1970s (although there were dips along the way) and a peak was reached (in constant dollars) in 1979. Annual average growth throughout the decade on the Island was 1.7% compared to 1.4% nationally. The early 1980s have seen a reversal of this trend, at both provincial and national levels, but this has been steeper at the national level. Overall annual average growth rates between 1970 and 1982 were 0.74% for Canada, compared to 1.04% for Prince Edward Island. These annual average growth rates mask the fact that gdp per employed person on the Island remains much lower than the Canadian average; as a proportion of this average, it was 62% in 1970 and 64% in 1982, only a very slight increase, and the lowest ratio of all the provinces.

A breakdown of output per worker by goods-producing sector reveals that the Island is particularly undeveloped in this important part of economic activity, and can only reach about 50% of the national figure in a good year. Part of this low figure is explained by the fact that Prince Edward Island has no substantial mining or forestry output, both of which are important in other provinces. In addition, manufacturing in Prince Edward Island tends to be rather low-value processing of agricultural or fish products. All these factors contributed to a pattern of low output per worker, low labour incomes, and higher labour to capital ratios.

Components of Personal Income

Wages and salaries accounted for about 57% of personal income in 1961 in Prince Edward Island. This proportion had increased to more than 60% by 1971 but has gradually declined to 55% in 1981. Total earned income has declined steadily as a proportion of total personal income since 1961, principally due (it appears) to

COMPONENTS OF PERSONAL INCOME
PRINCE EDWARD ISLAND AND CANADA
1961, 1971, 1976, AND 1981

	1961		1971		1976		1981	
	P.E.I.	**CANADA**	**P.E.I.**	**CANADA**	**P.E.I.**	**CANADA**	**P.E.I.**	**CANADA**
Wages, Salaries and Supplementary Income[1]	56.9	68.5	60.5	70.7	58.6	70.6	55.4	67.5
Net Income From Farm Operations	6.8	4.2	1.6	2.0	5.1	2.1	3.9	1.7
Net Income From Unincorporated Business	13.7	10.3	11.1	8.0	6.6	5.4	6.2	4.7
Interest, Dividends, and Investment Income	4.9	7.6	5.8	7.6	6.6	9.0	10.8	13.3
TOTAL EARNED INCOME	82.3	90.6	79.0	88.3	76.9	87.1	76.3	87.2
Government Transfers	17.6	8.9	20.2	11.2	22.4	12.6	23.0	12.4
Other	-	0.4	0.8	0.4	0.7	0.3	0.6	0.4
TOTAL PERSONAL INCOME	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada, 13-213
Note[1] Includes Military Pay and Allowances

declines in net income to unincorporated businesses. Simultaneously, government transfers have increased their share of personal income, from less than 18% in 1961 to 23% in 1981. This represents an increase from $200 per person in 1961 to $1,600 per person in 1981 in nominal terms, with particularly rapid growth between 1966 and 1976.

A comparable breakdown for Canada reveals wages and salaries accounting for about 68.5% of total personal income in the early 1960s, and about 67.5% in 1981. Earned income accounted for 91% of total personal income in the early 1960s, and there was a slight decline by this measure to 87% in 1981. Once again, the difference was taken up by an increase in transfer income.

Personal income in general, therefore, is lower in Prince Edward Island than nationally. The 1981 census revealed the average family income in the province was $20,666, or 77% of the Canadian average. Higher incomes were reported for Charlottetown and immediate vicinity (up to 87% of the national average) but they tailed off quite sharply towards the extremities of the Island. In Prince Edward Island, average family income was 71% of the national average, in Kings it was 70%. Incomes in individual communities ranged from the high in Charlottetown down through Tignish (81%), Souris (79%), Summerside (74%), Kensington (64%), and Kinkora (62%).

Only about one in twenty adults in 1970 earned over $20,000 on the Island (in 1980 dollars) compared to one in ten nationally. By 1980, about 9% of Islanders had achieved this income scale, compared to 18.4% of Canadians in general. Low earnings on the Island are coupled to higher unemployment levels and consequent dependence on UIC and other public benefits. This relative dependence depresses personal incomes below national average levels. Part of the explanation for low incomes also rests in the fact that relatively larger proportions of Islanders are either below 15 years old, or older than 65, and therefore less able to earn by working.

Summary

- There has been significant growth in the Prince Edward Island's gdp since the early 1960s, but this has not reached the rate of growth of the Canadian gnp, and has generally been more erratic than at the national level.

- Both service and goods-producing industries have performed creditably during the two decades, with some decline at the beginning of the 1980s. The basic division between services and goods production in the Island economy remains about 70:30 in favour of services, compared to about 60:40 at the national level.

- Public administration and defence accounted for the single biggest share of the Island's output in 1981, at about one-fifth. At the national level, manufacturing accounts for an equivalent proportion.

- There has been little improvement in gdp per person in Prince Edward Island, when expressed as a percentage of the Canadian average, since 1961. Although output per employed person has been increasing in Prince Edward Island, the provincial figure still does not exceed 64% of the national average, and falls even lower for goods production.

- All spending on Prince Edward Island exceeded gdp by a considerable margin in 1981, and the net balance of trade was therefore negative. Items brought to the Island from outside tend to be higher-value manufactured products. Markets for Island products are worldwide and have been increasing in scope, but given the low value of most Island exports they remain vulnerable from year to year because of swings in business cycles.

1.4 INVESTMENT

Capital investment per capita in Prince Edward Island in 1980 was about 61% of the Canadian average. Only investments in institutions (schools, hospitals, and so on), and government buildings were well in excess of the national average, at 246% and 122% respectively. Capital spending in these two public sectors was particularly high in 1980, due to construction work on both a new hospital and a new federal building in Charlottetown. Figures for other sectors fall far short of national averages. Investment per capita in manufacturing plants on the Island, for example, was only 8% of the national average in 1980, and was only about 30% for both the finance, insurance, and real estate sector, and the commercial services sector.

Governmental and institutional building, in fact, has exceeded business or farm non-residential construction since the mid-1960s and always by a substantial margin. All private investment looks healthier when spending on machinery and equipment, and on housing are included. Both, however, have been somewhat erratic in their performance. Machinery and equipment sales tend to follow the fortunes of the agricultural industry closely, with peaks in 1973 and 1980 caused by excellent potato prices. Fluctuations in housing construction have been even wider from year to year, with peaks in 1973 and 1978/79 contrasting sharply with troughs in 1975/77, and especially 1981/82; housing investment in this latter trough dipped below levels prevailing in the mid-1960s.

Between 1956 and 1980, Prince Edward Island increased the size of its capital stock (expressed in real terms) by about 130%. Although other provinces did much better by this measure over the same period, the absence of certain types of investment opportunities on the Island (for example, limited forestry, mineral, or energy resources) make this rate of capital formation quite acceptable.

By 1980, however, capital stock per capita in Alberta was almost three times that of Prince Edward Island ($17,966 versus $6,643 respectively). Capital stocks per capita on the Island reflect structural biases in the provincial economy. Only in investment in primary and construction, institutions, and government departments can Prince Edward Island compare favourably with other provinces.

The overall conclusion when examining the Island's capital accumulation is that it remains poorly developed in all sectors except institutions and governments, although capital spending on the most important primary sectors (agriculture and fishing) may approach and exceed the national average. Although Prince Edward Island has demonstrated a trend towards more intensive use of capital over the years since 1961, the rate of change has been much faster in other provinces. The net result is that, more so than most other provinces, the Island economy remains substantially labour-intensive. Any movement towards more efficient use of capital would increase both productivity and per capita incomes in Prince Edward Island.

2. SECTOR REVIEWS

2.1 AGRICULTURE

Although the value of primary agricultural production in Prince Edward Island in 1982 accounted for only 11.6% of gdp (slightly higher than 1961's 8.8%), this underestimates the importance of the farm sector to the Island economy. Factories which process agricultural products are the most numerous of all manufacturing establishments on the Island (32, or 24% in 1981), they employ 40% of all employees in factories, account for 43% of wages, 51% of value-added, and 61% of the value of manufacturing shipments. Combined direct and indirect employment in agriculture accounted for about 13% of all Island employment in 1983 compared to less than 6% nationally.

The increasing importance of agriculture in the Island's economy has occurred as the numbers of both farms and farmers have declined quite steeply. About one-third of the provincial population lived on farms in 1961 (compared to less than 12% on average in Canada) but this proportion went down to about 10% in 1981 (about 5% nationally). The number of census farms over the same period went down by almost 60% (from 7,335 in 1961 to 3,154 in 1981), but the actual rate of decline slowed markedly as the 1970s progressed. Indeed, most of the decline (about 40%) in farm numbers took place during the 1960s.

About half of Prince Edward Island's total area remains in farms in 1981, the largest proportion of any province. There was a much smaller loss in the amount of land in farms between 1976 and 1981 than between 1961 and 1976, and the amount of cleared and improved land actually increased by more than 6,000 acres during the 1970s, mostly because of an increase in the area used to grow crops. Indeed, there was a larger area of Prince Edward Island's farmed land actually cleared and improved in the early 1980s (about 501,000 acres, or 72% of the total area in farmed) than in either Nova Scotia (417,000 acres) or New Brunswick (466,000 acres).

Although there are fewer farms in 1981, those which remain are bigger and much more capitalized. The average size of a farm in Prince Edward Island in 1961 was 131 acres, about 60% of which was cleared; this had increased by 1981 to 222 acres, of which 72% was cleared. Although this is quite small by average Canadian standards, the intensity of use of cleared land in Prince Edward Island means a much higher value of output per acre.

The average total capital value per farm in Prince Edward Island in 1961 (expressed in 1971 dollars) was almost $18,000, or less than half the Canadian average of $37,000. On the Island, the capital value was split roughly as follows:

CAPITAL VALUES IN FARMS, PRINCE EDWARD ISLAND
1961 AND 1981

	1961	1981
Total Capital Value Per Farm (1971 $)	17,807	76,526
As % of Canadian Average	47.8%	54.2%
Population Of Total In:		
Land and Buildings	54%	68%
Machinery and Equipment	28%	21%
Livestock and Poultry	18%	10%

Source: Census of Agriculture

These capital values (once again in 1971 dollar values) increased in Prince Edward Island by more than 4 times to $76,500, but this was still little more than half the Canadian average. Inflation during the 1970s greatly enhanced the value of land to the degree that it accounted for 68% of the total capital value of Island farms in 1981, compared to 21% for machinery and equipment, and 10% for livestock and poultry.

There are more farms with higher values of sales in 1981 in Prince Edward Island. In 1971, only 2.5% of all census farms had sales worth more than $50,000 (in nominal terms), and some 78% had sales valued under $10,000. By 1981, one-quarter of census farms had sales of over $50,000, and 42% had sales of less than $10,000. Although consideration of inflation between the two censuses, and of good or bad years for prices or output, would qualify these trends quite significantly, they cannot obscure the facts that farm primary production on the Island has become much more commercialized.

As the size of farm enterprise has increased during the 1970s, so has the amount of debt owed by farmers. The total amount of debt owed by Island farmers in 1971 was $37 million, mostly borrowed from chartered banks, and the federal and provincial governments; this was 11.3% of total capital value of farms as measured by the census in that year. This total increased to more than $111 million in 1981 (in nominal dollars), or 16% of total capital values. Interest charges over the same ten years increased from 7% of total farm operating expenses to 12%.

Farm Cash Receipts and Principal Commodities

Total cash receipts to Island farmers vary more or less directly with receipts to potato growers. Potato receipts regularly make up 30-45% of total receipts, depending on success of the harvest, and prices. Dairy, hog, and cattle and calf receipts also vary quite significantly with prices, whereas dairy receipts are rather more stable. Combined receipts for these three groups of livestock products are roughly equivalent, year to year, with potato receipts.

Over the years, agricultural production in Prince Edward Island has diversified somewhat, although a significant dependence on potatoes remains. Several high value crops are grown, such as tobacco. Other high value crops include small fruits, and the Island remains the Atlantic region's primary area for production of grains, mainly because of requirements in crop rotations involving potatoes or tobacco.

The most important characteristics of principal commodities are:

- The area planted in potatoes has increased since 1961 by about three-quarters, mostly since the mid-1970s. As yields have also improved, total output has tended to grow rather faster than markets. A higher proportion of potatoes go to local use in the 1980s than in earlier years, particularly for processing.

- Much of the provincial beef production comes from dairy herds, with 45% of Island beef cattle being classified as Grades C or D compared to an average of 70% of Canadian cattle classified as Grade A. Island beef farms are mostly small, although total marketings have increased unevenly since 1961.

- There has been considerable expansion in the number of hogs reared on the Island since 1961, with corresponding increases in commercial marketings. Total provincial marketings as a proportion of national figures, however, have fallen back to levels which prevailed in the early 1960s (about 1.3%).

- Enormous increases in productivity in milk production have meant constant decline in the provincial dairy herd, from about 40,000 animals in 1961 to 24,000 animals in 1981. Average herd size has doubled since 1971, with about nine-tenths of Island milk production destined for manufacturing use, the remaining one-tenth for provincial fluid consumption. Fluid demand is showing signs of levelling off, although lack of industrial milk quotas in the province means local farmers cannot supply the requirements of the two big dairies.

- Tobacco was introduced to the Island about 1960, and in 1982 about 70 producers planted 4,000 acres and harvested a crop worth about $12 million at the farm gate.

- Prince Edward Island is the Atlantic region's premier producer of cereals, with particularly impressive growth in areas of wheat, barley, and mixed grain. Oats have declined quite substantially in importance since the early 1960s as higher-energy grains have been adopted. The healthy prices of the mid-1970s were particularly good for area expansion, and crop rotations involving an expanded potato acreage have also boosted cereal production.

- In addition to the commodity groups already mentioned, there is less important (but still significant) production of fruits and vegetables, and eggs and poultry on the Island. Forage crops (hay and silage) grown by farmers for their own use are an important part of total output.

Net Income and Input Costs

The proportion of national farm income coming to Prince Edward Island's farmers has varied in a narrow range since 1945, generally about 0.7 - 0.8%. There have been extremes outside this range, however, as low as 0.2% in 1971 and as high as 1.9% in 1981. There has also been a tendency for Island farmers to increase their share of the national total since the early 1970s, when proportions in the range of 0.8 - 1.0% and above have been more common. This reflects the fact that agriculture has done very well in Prince Edward Island, and has outperformed the farm sectors in the province's Maritime neighbours. Trends established in the 1970s gives a great deal of optimism about the future of the industry.

In general since the Second World War, net income has been declining as a proportion of gross income at both national and provincial levels, although a series of years with good prices in the early and middle 1970s appear to have arrested this decline at least temporarily. Fluctuations around the trend at the provincial level, however, have been wide; in 1971, for example, net farm income was only 9% of gross farm income, while in 1974 it was almost half.

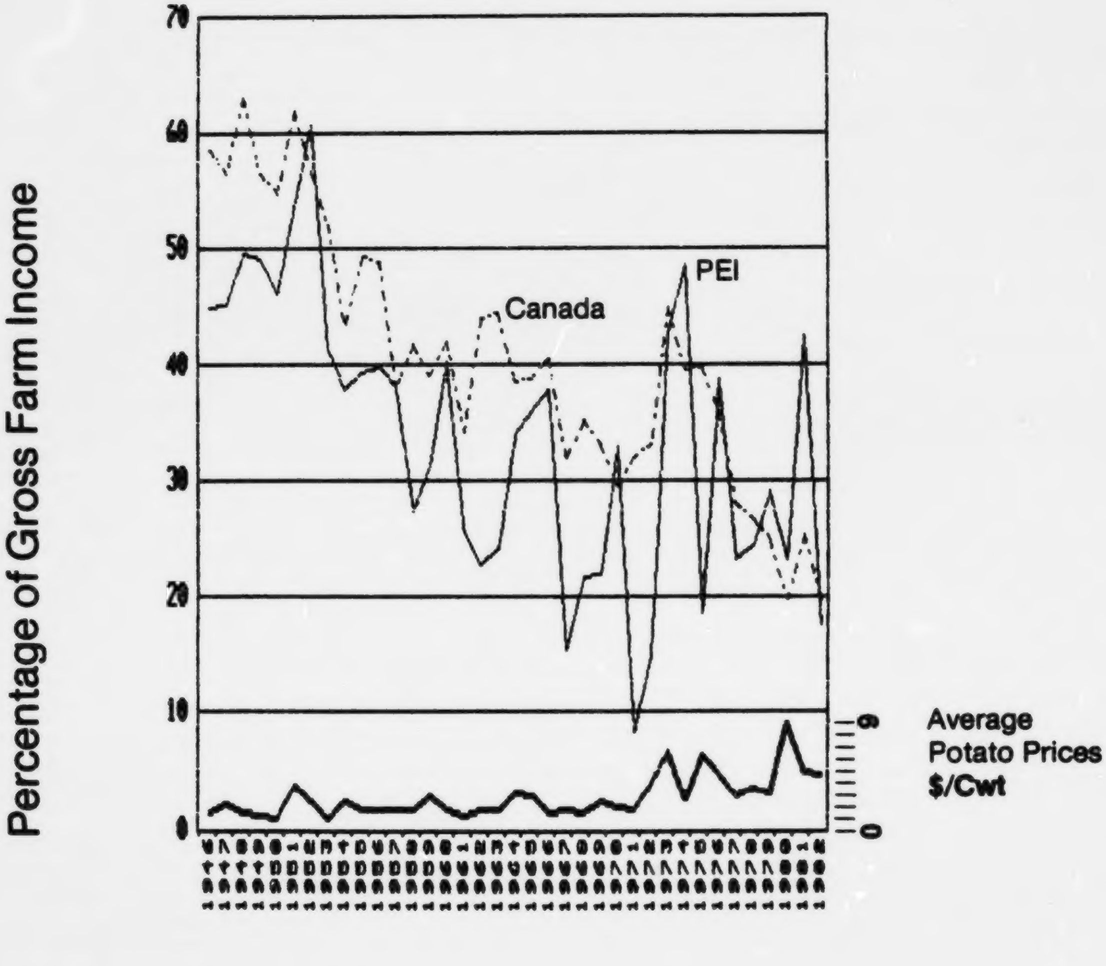
Using this measure as an index of farm profitability reflects three characteristics of overall returns to agriculture in Prince Edward Island:

- It confirms that good years have usually been those with good potato harvest.
- A good or bad year provincially does not necessarily coincide with a good or bad year nationally (for example, 1981-82, and 1962-63).

Net Farm Income as a Proportion of Gross Farm Income

Prince Edward Island and Canada and Average Potato Prices at the Farm Gate, Prince Edward Island 1946-1982

Source: Statistics Canada and Agriculture Canada



- Agriculture in Prince Edward Island for most of the time since 1945 has been less profitable than nationally, but has been increasing relative to the national average since 1973.

This last point deserves a little more exploration. A fact of agricultural life since 1973 has been steeply increasing costs of production facing all farmers in Canada. Farm operating expenses nationwide increased by an annual average of almost 16% from 1971 to 1981 compared to about 6% annually in the 1960s. Particularly steep increases were recorded for interest charges (23.3% annually in the 1970s, mainly due to high interest rates at the end of the decade); fertilizer and lime costs (21.1% annually); and miscellaneous crop expenses (17.4% annually).

These increases do not appear to have affected Island farmers so severely, even though an annual average rate of increase in operating expenses of almost 14% was recorded in the 1970s compared to 6% in the 1960s. Only for certain items was the Island's rate of increase higher than nationally, for example, taxes, and electricity and telephone charges. The province's rate of increase in operating expenses, however, has tended to exceed that for the Maritime region.

Processing Infrastructure

There are close links between Prince Edward Island's agricultural manufacturing sectors, particularly for processing the principal commodities.

Potatoes: One major freezing plant in New Annan is the principal market for potatoes on the Island. There is, in addition, a smaller canning plant in Bedeque. Both processing facilities also process other vegetables. The New Annan plant has tried to integrate vertically by buying land to assure supplies of potatoes. This movement has run afoul of Islanders' apprehensions with regard to large corporate ownership of land.

Beef and Pork: The Canada Packers plant in Charlottetown has been reduced to the status of a "kill and chill" facility under the temporary management of the provincial government. The other big meat-processing plant was placed in receivership in early 1984. The future of both plants is uncertain as this report was being prepared.

Poultry: The province's only commercial killing plant closed in 1980. Broilers are currently shipped to Nova Scotia to be killed.

Dairy Products: There are two principal dairies, one each in Charlottetown and Summerside. In addition, there are about a dozen other smaller processing facilities across the Island producing a full range of dairy products. Lack of industrial quota means that some industrial milk must be brought from the mainland to fulfil manufacturing needs. There is an attempt currently to set up a provincial industrial milk pool to satisfy the demand of Island processors. Both big dairies, however, sell in undiversified markets; each depends essentially on one principal buyer.

As a general comment, the Canadian food processing industry is regarded as being highly specialized and competitive. To maintain profit margins, therefore, requires efficient operation with output at a sufficient level to minimize unit overhead costs. This has lead to a process of fewer, bigger, more centralized processing plants. Centralization which involved any transfer of processing capacity away from Prince Edward Island would have at least two distinct effects. In the first place, it would mean farmers bearing higher costs of transporting their animals for processing at mainland plants. In the second place, Island manufacturing jobs would be lost. The increasing degree of interdependence between primary and secondary agricultural industries on the Island must be recognized as a most important part of the provincial economy to avoid an attrition of processing capacity.

Production, Markets, and Regulation

Although Canada's farmers have become extremely efficient producers of goods, this greatly enhanced capacity to supply agricultural products has not necessarily been matched by increases in demand for agricultural products. In theoretical terms, the demand for farm products generated by growth in population and income has been far exceeded by a vast increase in supply generated by improvements in productivity. Canadian farm output per agricultural worker has increased at a rate of about 5% annually on average since 1947, almost twice the rate of increase of output per worker for all industries. Although this great increase in output, unmatched by a parallel increase in demand, has caused radical change in the agricultural sector (fewer and larger, more specialized farms), the problem has persisted as alternative employment opportunities for people leaving farming have declined. This orientation towards production rather than towards markets has given rise to a complex series of regulations to assist and control farm products.

Part of the problem lies in the nature of the agricultural industry itself, and the nature of the demand for food. Economic textbooks invariably cite agriculture as the industry which, in reality, most closely approaches a state of perfect or atomistic competition; many small producers supply the market, each of which has absolutely minimal effect on prices. Farmers are price-takers, not price-makers. Equally, the demand for food is usually regarded as being "price inelastic"; small variations in production for whatever reason will result in proportionately greater variations in price. This underlies the paradox that good harvests usually mean less farm income in aggregate, and vice versa. A catch-phrase characterizing agriculture is, "It isn't what you can grow that counts, it's what you can sell".

Variations in production and prices from year to year mean quite wide variations in farm income. Prince Edward Island is more vulnerable to these swings because of over-dependence on one or two commodities, particularly potatoes. The various and many attempts to regulate farm prices in Canada have been aimed fundamentally at minimizing short term fluctuations in prices, and to assure a reasonable, reliable return to farmers. The mechanisms used have included marketing boards, price stabilization, production quotas, deficiency payments, grants and subsidies, and public purchase and storage schemes. Of the five principal agricultural commodities produced by Island farmers (potatoes, beef, pork, dairy products, and tobacco), all but beef are subject in varying degrees to public or private regulation, whether it applies to production, prices, or marketing. In 1982, these commodities represented about 70% of total farm cash receipts.

There is evidence that regulation has tended to promote over-production with reference to existing markets, although the regulatory mechanism itself may not be solely responsible for the over-production. By supporting an industry which would otherwise be subject to normal market forces, regulation also impedes the flow of resources (human, physical, and capital) from less to more efficient sectors.

There is a perception that regulated commodities are subject to limited potential expansion. This, perhaps, applies more to those commodities where supply is managed, less to those under other kinds of regulation. This latter group in Prince Edward Island includes such commodities as potatoes, tobacco, and hogs. These collectively have been responsible for a good agricultural performance since 1970, and should provide stimulus in the future. This is particularly so in view of the fact that Atlantic Canada is deficient in supplying its own needs in many agricultural products, and this alone offers opportunities for Island farmers. The quality-consciousness of the province's agriculture sector cannot but help in this respect.

Two Final Notes

Intensive cultivation of farm land in Prince Edward Island for many years has resulted in rather persistent problems of soil erosion. Conservation of this most valuable resource should remain a concern to scientists, officials, and farmers alike.

And, a well developed service and research infrastructure based on provincial and federal departments of agriculture will be substantially enhanced in a few years when the new Veterinary College is built and begins operation. This will be a welcome addition, particularly in terms of animal research.

Summary

- Primary agricultural production accounted for less than 12% of Prince Edward Island's gdp in 1982, but related value of output and employment in the manufacturing sector makes the industry a prime component of the Island economy. Performance by the sector since 1970 has been impressive.

- Growth in output in agriculture has been accomplished by fewer farmers working less land, but with farms being bigger on average and being more intensively farmed. About half the Island's total land area is classified as being in farms, for a larger total area than in either Nova Scotia or New Brunswick.

- The capital value of farms in Prince Edward Island has also increased substantially, but still remains at about 50% of the national average.

- Total farm cash receipts vary from year to year largely depending on receipts for the single most important product, potatoes. Other important commodities are dairy products, beef, pork, and tobacco. Prince Edward Island is the Atlantic Region's principal area for growing cereals.

- Net returns to Island farmers have tended to decline since 1945, although year-to-year fluctuations around the downward trend have been wide. As well, for the first two decades since 1945, returns were below the Canadian average but during the 1970s have shown a tendency to exceed this national average. This may partly be due to to the fact that steeply increasing costs have affected profit margins at the national level more severely than at the provincial level.

- The degree of interdependence of primary agricultural production and processing is being enhanced at present as the processing sector on the Island undergoes adjustment. Attrition of processing capacity in favour of more centralized plants on the mainland will involve higher costs to farmers, and lost jobs on the Island.

- Canadian agriculture (including Prince Edward Island) is characterized by production exceeding market demand. A variety of public and private intervention mechanisms have been introduced in an attempt to avoid excessive fluctuations in farmers' income. There are views that these mechanisms have promoted over-production, and have generally inhibited the reallocation of resources from less to more efficient enterprises. The existence of regulation, however, should not mean that expansion of markets for Island farm products is limited, particularly within the Atlantic region.

2.2 THE FISHERY

Basic Indicators and Performance

Since 1961, the value of primary fish production in Prince Edward Island has varied from a low of 1.1% of gdp in 1976 (4% of the value of all goods production) to a high of 3.8% of gdp in 1961 (12.5% of goods production). The Island's share of all the Atlantic region's primary fish production varied within a narrowish range mostly from 7 to 8.5%. As is the case with primary agricultural production, however, the value of primary fishery production understates the true impact of the sector on the Island economy, as there is significant interdependence with the manufacturing (processing) sector. Thus, in 1982, although there were 3,013 registered fishermen in the province (about 5 or 6% of the Atlantic total), there were also another 758 shore-based workers in processing plants throughout the Island.

About 55% of registered fishermen were classified as full-time, and most recent estimates indicate that the full-time equivalent workforce engaged in fishing has been increasing gradually since the early 1970s. Income per fishermen compares quite favourably with total personal income per employed person in Prince Edward Island (about 85% of the provincial average in 1981) but there are fluctuations in fishing incomes from year to year as stocks and prices vary. Thus, for instance, fishing incomes dipped as low as 70% of the provincial average personal income per employed person in 1975, and as high as 98% in 1979.

There is virtually no opportunity to fish throughout the year in Prince Edward Island as the fishery is predominantly inshore using small, independently-owned boats. There were 1,434 registered vessels in the province in 1981 all but nine of which were less than 25 tons. The number of vessels has fallen steadily, but average capital values and size of individual vessels has increased correspondingly. In 1975, for example, 95% of all registered vessels were less than 10 tons compared to 45% in 1981.

Seasonality of effort in catching fish also translates into seasonality of operation in processing facilities on the land. Total employment in fish processing varies from about 1500 at the height of the season in mid-year, to about 200-300 in winter months. The full-time equivalent employment has been a little less than 2% of the Island's total employment since 1979 with wages and salaries per employee varying around 80% of the provincial average total earned personal income per capita. The employment is distributed among 24 inshore plants and two offshore plants in the early 1980s. The recession of 1981-82 saw closure of the Georgetown offshore plant, although there are strong indications that this will reopen in 1984.

Estimates of the fishery's contribution to total value-added in Prince Edward Island (both primary and secondary components) varied during the 1970s from 11.6% of the value of all goods produced in 1975, to more than one-fifth in 1971. It stood at 13.3% in 1980, and during the 1970s has been more or less on a par with corresponding proportional figures for the fishery in Newfoundland and Nova Scotia. Thus, although actual value of fish landed and processed in Prince Edward Island is much smaller than in either of these two provinces, its proportional importance to the provincial economy is roughly equivalent.

Although rather difficult to quantify, there is a general impression that the Prince Edward Island fishery has shown great resourcefulness in recent years, particularly in processing. Smaller processors have survived recession and are thriving on their own brands. Small operators have also banded together to pool marketing efforts, (for instance, through Northumberland Fisheries), to sell new products of improved quality in new markets. Such developments give great optimism for the future.

Species Composition of the Fishery

Lobster is by far the most important species taken by Island fishermen. This dominance has gradually increased since 1971, once again allowing for year to year fluctuations in catches and prices, and the species has regularly accounted for 55-65% of the total provincial landed values since 1971, reaching a high point of 68% in the very good season of 1983. It is a high value species which has only regularly accounted for between 10 and 13% of landings by volume since 1975. Almost 2,000 Island fishermen participated in the lobster fishery in 1981, down from 2,700 in 1973.

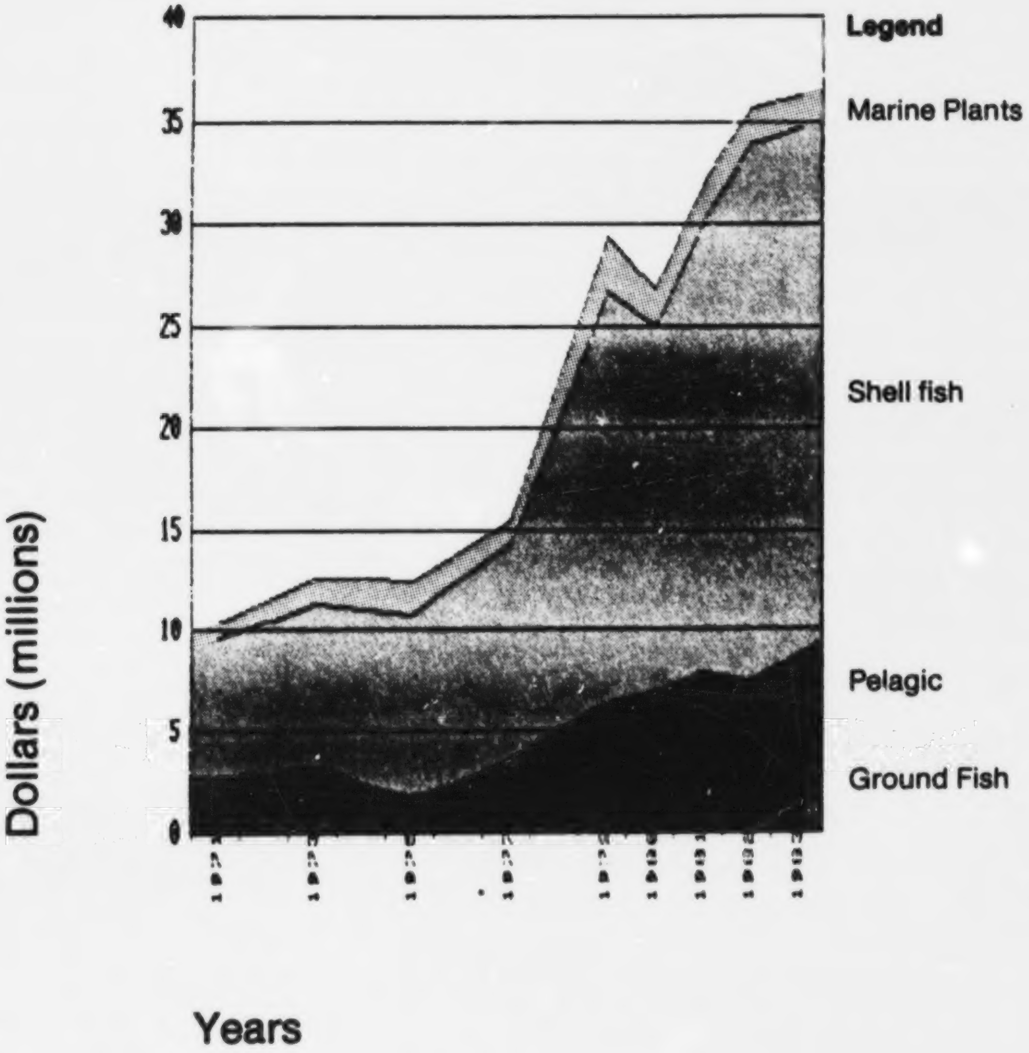
Lobster has formed the stable core of the provincial fishery since the early 1970s, whereas quite wide fluctuations have characterized groundfish and pelagic species. Landed values for these species (mainly hake, cod, redfish, herring and mackerel) have tended to stay quite low relative to lobster. Combined groundfish and pelagic volume of landings accounted for almost 60% of all landings in 1971, they were only worth 25% of total landed values. Corresponding proportions in 1982 were 53% and 21% respectively.

Other significant species in the Island's fishery include:

- Tuna, important not only as a source of high-value protein in the Japanese market, but also as a sport fishery;

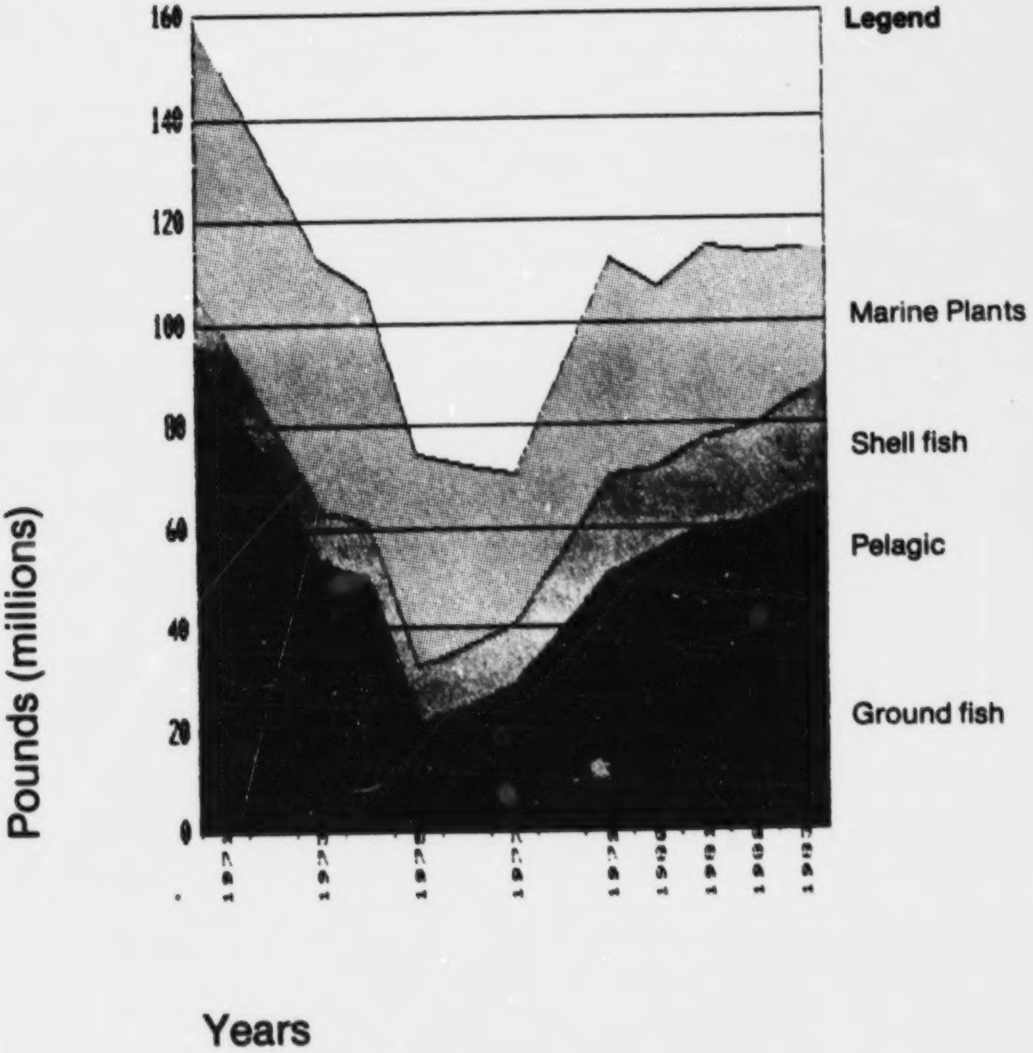
Value of Prince Edward Island Fisheries Landings 1971-1983

Source: Prince Edward Island Department of Fisheries, and Fisheries and Oceans Canada



Volume of Prince Edward Island Fisheries Landings 1971-1983

Source: Prince Edward Island Department of Fisheries and Fisheries and Oceans Canada



- Scallops, a high-value species in the Northumberland Strait which extends the seasonal efforts of lobster fishermen when stocks allow;

- Irish moss, a marine plant which has regularly accounted for between one-third and one-half of landings by volume since 1971, although its share of landed value has tended to decline, for example, from almost 13% in 1975 to less than 5% in 1982.

As with farmers, individual fishermen in Prince Edward Island have little, if any, influences on the prices they receive. As a significant portion of the total catch is processed in the United Maritime Fishermens' facilities, however, Island fishermen can exert some influence on prices. Such cooperation is more rare in agriculture. Although prices in general have increased since 1971, year-to-year fluctuations have made this increase uneven.

Resource Management

Although the Island fishery is quite distinct from the Newfoundland and Nova Scotia industries (which are predominantly based on distant-water fishing), management of the Island sector poses similar problems. Mostly, these derive from an unavoidable characteristic of all commercial, salt-water fisheries, their "common property" nature which essentially removes the business of resource management away from the people who actually catch the fish. In these circumstances, resource management has largely fallen to governmental regulation, and even the most sophisticated regulatory mechanisms can only approximate effectiveness when dealing with a resource which varies widely in space and time.

The separation of resource management and resource exploitation in the fishery poses special problems. Regulatory decisions are rarely popular with fishermen as they involve some restriction on the amount of fish taken, on the amount of time spent fishing, or on the number of people allowed to fish. All have essentially the same effect, to reduce pressure on what is perceived as a resource which has been over-exploited and which requires time to recover. Not only must the total numbers of fish in a stock recover, but also the average size, so that returns per unit of effort will increase. Resource management, therefore, is a relatively long-term phenomenon which may inhibit a fisherman's ability to earn an income from year to year.

Management by regulation has had a chequered history in Prince Edward Island. For example, scallop stocks in the Northumberland Strait have only quite recently recovered some semblance of health after conservation, including some years of complete closure. As well, a low limit on the size of lobster carapaces, established in earlier years when the catch mainly went for canning, means productivity is lower than if this limit were increased. Most of all, however, there has been strong resistance to, or misunderstanding of, management of the resource on the part of fishermen themselves, who perceive the loss of annual income over the period that regulations are in force, as outweighing the health of the resource itself.

Some Characteristics of an Inshore Fishery*

Prince Edward Island's predominantly inshore fishery is governed by seasonality, in turn dictated by climatic and ice conditions in the southern Gulf. Full-time fishermen will spend little more than half their time directly engaged in fishing or in closely related activity such as vessel-, trap-, or net-repair. This dominance on an inshore effort also encourages other developments:

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* This section is, in part, based on P. Copes, "Fisheries Management on Canada's Atlantic Coast: Economic factors and socio-political constraints", in The Canadian Journal of Regional Science, 6 (1), Spring 1983, pp. 1-32.

- There is an over-reliance on relatively few species. In the case of Prince Edward Island this essentially comes down to lobster which has been responsible for an increasing share of landed values since the early 1970s, and which accounted for 68% of total landed values in 1983.

- The fishery relies heavily on a relatively large number of independently-owned and operated vessels which are almost all quite small. The labour input, therefore, is very large and labour productivity is correspondingly low. Low returns and a short season generally mean that fishermen have neither the willingness nor the ability to install sophisticated equipment on their vessels to increase productivity, even if stocks and regulations would allow this.

- A very large labour input in the inshore fishery also results from the sector's role in general as a residual employer. Low returns mean that in times of economic prosperity and wider alternative job opportunities, lower income employment in the inshore fishery may decline as fishermen are attracted to better-paying jobs elsewhere. Even then, however, low opportunity costs for fishermen (because of fewer skills, high levels of unemployment, relative isolation from major job markets) will inhibit much movement away from fishing. Conversely, during periods of rising unemployment, a return to fishing is relatively easy as capital requirements in owning a small boat are quite low. This deters resolution of what is regarded as a fundamental problem in the fishery: too many fishermen chasing a given number of fish. Efforts to reduce the number of fishermen while maintaining a given level of effort have usually been bitterly opposed, and so incomes remain low, technical innovation very difficult, and productivity low. For groundfish and pelagic species taken inshore, this predicament also severely affects quality of fish as there is little ability or incentive to get away from a "pitchfork mentality" in handling the fish at sea and at the wharf.

- As weather and ice conditions, as well as stocks, restrict the ability of small boats to stray out of port for much of the year, processing facilities onshore must also adopt seasonal patterns of work. Unit overhead costs correspondingly increase sharply if a plant must lie idle for part of the year, full-time employment in the plants is the exception rather than the rule, returns to capital are low, and adoption of new and better technology to improve productivity are inhibited. Plants remain small and rather specialized, and find it difficult, among other things, to launch effective marketing campaigns. Some small, seasonal plants, however, do have advantages, particularly if the plant is still operative and the original investment has been written off. Small plants in Prince Edward Island have, in general, done much better than big plants during the recent recession.

Aquaculture: Some Aspects*

Island fishermen sold oysters worth $1.4 million in 1981, and the capacity of Island waters to provide this gourmet shellfish has long been recognized. The cultivation of oysters and other species has also had quite a lengthy history in Prince Edward Island as well as in other parts of Atlantic Canada. So far, the potential and the rhetoric have outweighed actual results. There have been encouraging developments recently, particularly for mussel cultivation. There are two identified growth areas for aquaculture:

- Mussel cultivation could be increased by about ten times, and market expansion (as well as marketing) indicates great potential if consistent quality can be supplied. Minimum size for a viable operation would be 45 tonnes annually, essentially a part-time enterprise.
- Oyster expansion is deterred by difficulties in assuring consistently high quality and volumes throughout the year, although there are indications that substantial increase in supply would not significantly depress markets, particularly for the "half-shell" trade.

Other Identified Fishery Opportunities

- Aquaculture opportunities have been mentioned for scallops, lobster, and quahogs. Enhancement of existing stocks of oysters, lobsters, and scallops also offer possibilities. The feasibility of all these remains untested.

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* For further discussion of aquaculture, refer to Science Council of Canada, Aquaculture: A Development Plan For Canada. A working paper prepared for discussion purposes by the Industry Task Force on Aquaculture in Canada, February 1984.

- Island fishermen are anxious to regain crab fishing licences (lost about 1970), to gain a share of a lucrative North American market which opened with failure of the Alaska King Crab fishery in 1980. As well as renewed access to the Snow Crab fishery, there is potential also in catching Rock Crabs.

- When the new Veterinary College opens, research potential in Prince Edward Island will be greatly enhanced, and should allow more thorough investigation of fishery-related and aquacultural opportunities and problems.

Summary

- Prince Edward Island has maintained its share of the Atlantic region fishery since 1961, and there are important linkages with the secondary sector (through processing) and other resource sectors (through seasonality of occupations).

- Although there were 3,000 or so registered fishermen in 1982 on the Island, strong seasonal patterns of effort (based on environmental and biological factors) for a predominantly small-boat fleet mean the majority of effort is inshore. This type of fishery is vulnerable to low productivity, low incomes, high unit costs for plant overhead, and low levels of technical innovation both for vessels and plants.

- There is considerable reliance on lobster as the main single species caught. This accounted for 68% of landed values in 1983, although only about 10 or 12% of volumes landed. Groundfish and pelagic landings have varied widely during the 1970s due to stock and price problems. The latter species remain low in unit value relative to lobster.

- There are problems with resource management, low productivity and returns, too many fishermen chasing a fixed stock of fish, marketing, and quality in the Island fishery. Aquaculture offers potential, but this over the medium term at least appears rather limited if past results are an indication. Most short- and medium-term potential in the fishery, however, probably lies with improved resource management of existing stocks, and improved marketing.

2.3 FORESTRY

Prince Edward Island is not known as a forestry province although almost half the total land area is wooded. The forest is fundamentally a remnant or descendant of a much more diverse and rich tree cover which was substantially depleted by the ship-building era of the late nineteenth century. Inferior spruce and fir predominate.

About 95% of the province's forest is regarded as productive and operable, containing about 21 million cubic metres of wood. The harvest in 1981 was 333,600 cubic metres, split about 50/50 between sawlogs or pulpwood, and fuelwood. About 16 million board feet of lumber is produced from local wood compared to, for example, 20 million board feet which are shipped to the Island in an average year. Most of the Island's 50 or so sawmills are very small (less than five employees), seasonal, and family-owned. Pulpwood is shipped to mills in New Brunswick or Nova Scotia, although demand from the mills has not been very consistent.

The provincial forest is rather unusual in Canadian terms in that it is 90% privately owned, mostly by 16,000 small woodlot owners with holdings of about 45 acres on average. Tenure constraints effectively limit the available resource base to about 60% of the total. A fragmented tenure pattern has severely inhibited management in the past, and about 35% of the forest cover has regenerated into genetically poor trees with little commercial value. About 100,000 acres of softwoods (17% of the total) have been damaged by insects. Highly fragmented ownership also results in inefficiencies of harvesting.

The province's woods certainly present a valuable resource in spite of drawbacks, but intensive managements is rather urgently needed. Some initiatives in this respect were taken under the Comprehensive Development Plan, and subsequently there has been a forest biomass inventory. A federal/provincial forest resource development agreement has been signed to address rational management of the woods.

At current levels of cutting, there is an estimated 20-year supply of sawlog-quality softwood in Prince Edward Island, and a 14-year supply of sawlog-quality hardwood. Perhaps more important than this, however, are the excellent conditions the province possesses for tree-growth. Management of wood resources could contribute to the Island economy significantly by fostering more self-reliance in lumber, and to meet a buoyant demand for firewood.

2.4 MANUFACTURING

General Indicators and Performance

A manufacturing economy based on ship-building dominated Island life during the second half of the nineteenth century. Secondary industries during these times complemented well-established enterprise based on agriculture and fishing. Much of the non-resource based manufacturing activity declined quite precipitously as Ontario expanded after 1900, and not much of this former golden era in Prince Edward Island has been recovered.

There was rapid expansion of manufacturing on the Island in the 1970s. In nominal terms, value added in manufacturing industries increased from $22.4 million in 1971 to $78.5 million in 1981, or by 13.4% annually on average. Growth in Canadian manufacturers over the same period was of the order of 12.9% annually. Unfortunately, the pace of growth on the Island was only rarely sustained, and few long-term jobs were created in manufacturing.

Growth in manufacturing in real terms was about 3.7% annually on average between 1971 and 1981, although there have been reverses in this growth in the early 1980s. Manufacturing output accounted for 7.7% of Island gdp in 1971, and 7.9% in 1981.

Components of Manufacturing

There are about 300 firms engaged in various types of manufacture in Prince Edward Island, although only one-half of these were included in the 1981 Census of Manufacturers. More than one-third of those in the Census had fewer than five employees, and all but 13 had fewer than 100 employees. Closure or lower levels of output at some big plants since 1981 have reduced the number of large employers even further.

Food processing is the most important manufacturing activity, demonstrating a close link with two other major industries, agriculture and the fishery. Five of the Island's major employers in 1981 (more than 100 workers) were in meat, fish, fruit and vegetable, or dairy processing plants; and one-third of all firms in manufacturing were in some kind of food processing. The value-added from food processors in 1981 was two-thirds of all Island value-added from manufacturing, and about 60% of manufacturing employment was in food processing plants. (Business conditions since 1981 have almost certainly reduced the levels of employment at bigger plants.)

Other manufacturing output covers a wide variety of products including metal fabrication, health-care products, electronics, plastics, garments, chemicals, kitchen utensils, crafts, and printing.

Manufacturing Employment

Something like one-quarter of Canadian total employment was in manufacturing industries in the early 1970s, and there has been a gradual decline in this proportion since then to 19% in 1982. Corresponding figures for manufacturing employment in Prince Edward Island over the same period were rather more than 10% and about 9% respectively. Part of the reason for the decline in the early 1980s was due to loss of manufacturing jobs in the recession, and at both national and provincial levels service industries have been increasing their share of total employment.

Productivity (as measured by manufacturing output per employee) in Prince Edward Island increased from 57% of the Canadian average in 1975 to 71% in 1982. Island factories tend still to be characterized by low investment and high labour/capital ratios. Increases in productivity appear to be due solely to expansion at a few of the bigger processing plants.

Manufacturing: Some Characteristics

Linkages to Resource Sectors The integration of Island farmers and fishermen with its manufacturers has been mentioned several times in this review. Although the linkages are important to the provincial economy, resource processing has its disadvantages:

- If supply of raw materials is seasonal, then plant operation and employment also tends to be seasonal. This increases overhead costs per unit of output; inhibits increases in productivity and labour skills; and encourages low-value production which is vulnerable to cyclical swings in prices in ways similar to agricultural and fishing production.

- Although primary production of resources is an important component of Island production, modern processing facilities demand a reliable, large-volume supply of raw materials. For one reason or another (total production capacity in the primary sectors, or occasionally institutional obstacles as in the case of industrial milk, or seasonality of supply from an inshore fishery) this supply cannot be assured, thus making some processing industries rather marginal.

Economies of Scale With a few exceptions, mostly in the food processing industry, most Island factories are small and do not necessarily rely on local supplies of raw materials. The products of many of these smaller plants are diverse, and in many cases the decision to locate on the Island may have been fortuitous. Most firms cannot take advantage of either internal or external economies of scale because they are small, the operate in relative isolation from firms with similar types of production (there are no "agglomeration economies"), and Prince Edward Island itself is a very small part of the global market. In terms of marketing itself, this lack of economies of scale may be quite a severe competitive disadvantage.

__Other Competitive Disadvantages__ Lack of economies of scale and an over-reliance on resource-based manufacturing are disadvantages in any industrial economy. Prince Edward Island faces other drawbacks:

- High costs of electrical energy.
- Transportation costs tend to be high, especially, for low-value, high-bulk processed products. This is aggravated by a relatively eccentric location with respect to markets.
- Marketing skills tend to be poor.
- Because of the nature of most manufacturers on the Island, labour skills are undeveloped and productivity is low, due mainly to a low level of investment per manufacturing employee relative to the national average.
- There is quite limited access to capital, advanced skill-training facilities, and research and development facilities.

Summary

- Manufacturing in Prince Edward Island expanded quite rapidly in the 1970s, at a rate rather above the national average.
- Most Island factories are small, with the biggest being involved in food-processing based on local agricultural and fish production. This sub-sector is the most important manufacturing activity on the Island, accounting for 60% of sectoral employment, although a reliance on resource-based processing tends to impart similar disadvantages to manufacturing as apply to primary production.
- Island factories tend to be characterized by low investment and high labour/capital ratios.
- Other disadvantages which apply to provincial manufacturing include lack of ability to create economies of scale both internally (within the firm) and externally (within Prince Edward Island manufacturing); high costs of electricity and transportation; poorly developed marketing skills; and restricted access to capital, skill-training, and research and development.

2.5 SERVICES

Both Adam Smith and Karl Marx regarded services as parasitic, living off the productive or tangible fruits of economic endeavour. In many socialist economies, services are relegated to a welfare function, not contributing to production or wealth creation. Many of these threads of economic thought have persisted to the present, where service industries are granted a status second to goods production.

Despite this status and reputation, services account for about 70% of Prince Edward Island's gdp, and for about 65% of its employment. Growth of the sector throughout North America has been little short of astonishing since 1950, with value of output increasing by 300% in real terms in Canada alone. Much of this has occurred as all industry has become more specialized, and as goods-producing sectors, for example, have preferred to buy services outside which were previously provided within the firm. Along with these growth figures, there have been other developments:

- The sector accounts for 80% of total female employment.
- There is a much higher incidence of part-time work in service industries than in goods production.
- It attracts large proportions of the most highly skilled and highly qualified manpower.

General Indicators of Performance

There are five broad classes of services:

- Transportation and communications, sometimes also including utilities.
- Finance, insurance, and real estate.
- Trade, both wholesale and retail.
- Community, business, and personal services.
- Public administration and defence.

The total value output of all services in Prince Edward Island has accounted for 70-75% of gdp since 1975, although there has been a tendency for services' share of gdp to decrease at the same time as services at the national level have been gradually increasing their share of gnp. Proportionately, however, services on the Island are still more important than nationally in the early 1980s, although the gap has narrowed noticeably.

There are other distinctions in the early 1980s between services at national and provincial levels:

- Transportation, communications and utilities have been a declining portion of gdp in Prince Edward Island, an increasing portion nationally.
- Public administration and defence accounts for about one-fifth of Island gdp, but only 7% of gnp in Canada.

- Community, business, and personal services account for about one-fifth of Canada's gnp, but only 14% of Prince Edward Island's gdp.

As services have increased their share of the provincial gdp, so service employment has increased since 1961. In that year, the split between goods production and service employment was about 50/50; by 1981 this had changed to 67/33 in favour of service employment. Since 1975, service employment has increased from 60% of the total to two-thirds of the total in Prince Edward Island, although these shares still lag slightly behind national figures of 66% in 1975 and 69% in 1982. In both Canada and Prince Edward Island, the service sector was responsible for 80% of all new job creation during the 1970s, with particularly healthy growth provincially in finance, insurance and real estate (56% between 1975 and 1980), community business, and personal services (30%), and trade (14%). The larger proportion of all new jobs was filled by female workers.

Although average weekly earnings in Prince Edward Island are significantly below the national average (about 81% in 1983), this discrepancy does not appear to be as pronounced for service industries as for goods-producing industries. The Island average weekly earnings for goods production, for example, was about 64% the national average, but this rises to 88% for all services and as high as 90% for community, business, and personal service earnings.

A similar pattern has characterized investment. Although total investment per person in Prince Edward Island fell to 48% of the national average in 1982 from 70% in 1975, figures for the service sector indicates a much better performance. Much of this has been due to public works, where Island investment per person exceeds the national average.

Components of the Service Sector

Transportation, Communications, and Utilities Contrary to trends in the rest of Canada, this sector in Prince Edward Island has undergone gradual decline since the mid-1970s. This is substantially explained by the nature of the sector itself; transportation and utilities are long-established activities with limited scope for growth, but communications is one of the 1970s' and 1980s' growth industries where expansion has affected national economic patterns much more than in Prince Edward Island. The importance of this lag in expansion of a provincial communications sector (including technologies which embody such advances as silicon chips and fibre optics) will also reflect in delays by other sectors in the Island to adopt more productive means of operation. Notably in the province, the telephone system still retains a significant proportion of non-private (party) lines which inhibits modern electronic communications. This, in turn, is a vital part of the information system required to run modern industry efficiently.

Trade Island trade as a proportion of gdp has more or less responded to equivalent changes at the national level, although there is a very small wholesale trade sector in Prince Edward Island; most Island demand is serviced from Moncton, New Brunswick. There has been a gradual decline in the relative importance of trade since 1975, although the consumer spending which is reflected by retail trade statistics is a vital part of all economic activity in the Atlantic region. In general, growth for grocery and general stores has been static for some time, whereas specialty stores have done much better. The sector is characterized by low skills, low wages (about 77% of the Canadian average weekly wage for trade in Prince Edward Island), above-average numbers of part-time jobs, and higher than average proportions of women and /or young workers.

Finance, Insurance, and Real Estate This is a very important sector in terms of output which is also characterized by a higher than average proportion of female labour and employment. It includes services such as banking and so on. It offers valuable support services to all other business. As there are no national or regional offices located in Prince Edward Island, many of the businesses represented by this sector employ an overwhelming proportion of their workers in clerical or equivalent positions; the proportion of clerks, tellers, and so on, nationally is about 60% of total sector employment, and this is probably higher in Prince Edward Island. Increasingly sophisticated communications technology from central offices mean that, on the Island, this sector will grow slowly, although incomes in the sector will increase as lower-paid workers are replaced by machines.

Community, Business, and Personal Services This is the single biggest sector by employment throughout North America, and it accounts for a little less than one-half of all service sector employment at both provincial and national levels. Included in the sector are commercial and business services (including lawyers, consultants, architects, engineers, accountants, and so on), and consumer services (shoe repair, hairdressing, hospitality services, and so on). Hospitality services are particularly important in Prince Edward Island, and may account for 10,000 jobs of which up to 75% are seasonal. The sector also includes important non-commercial services, such as education and health. Health services in particular have grown rapidly in the 1970s, but this growth is likely to slow down as governments try to reduce accumulated deficits.

Public Administration This sector is the single biggest operating in Prince Edward Island as measured by value of output. Government spending per person on the Island exceeds the national average ($2080 in 1981 on the Island compared to $1738 nationally), and the combined federal and provincial government payrolls are 28% of total wages and salaries in Prince Edward Island compared to about 10% nationally.

Services: Some Characteristics

One influential theory of the development of service industries sees them as a direct result of growth in demand spawned by goods production. As a sophisticated interdependence between primary production and secondary manufacturing develops, the increasing specialization of all economic life will generate new demand for services previously provided internally (within the unit of production) and will furthermore generate consumer demand for services by increasing personal disposable income.

This theory would see service output expanding and contracting more or less in line with goods output, but in fact fluctuations in service provision have been much more moderate than in goods production. Certainly, annual changes in goods output in Prince Edward Island have been much wider than for services, indicating that the sector may act as a buffer against more violent fluctuations in economic activity or more likely that services themselves embody, or are cushioned by, a substantial government sector. There have been wider swings in certain service industries, for example, trade, transportation, communications, and utilities, which are more dependent on goods production.

Some types of services are considered independent generators of economic growth, although Prince Edward Island has probably not benefitted from these services very much. Successful growth and development in a service-dominated economy must rely on export of services, in the same way as exports of merchandise goods may fuel economic growth. This is substantially absent as a vital component of the provincial economy, which still relies on exports of goods to stimulate internal economic performance. Indeed, this aspect of a service industry does not exist to a great degree at the national level, although exports of certain financial and consulting services have become quite important. It appears in Prince Edward Island, therefore, that services as an engine of growth are not well developed, and have largely been pulled along by demand from the goods-producing sector and by the growth in government spending.

Summary

- Services regularly account for 70-75% of the value of output of the Island economy, and for about 68% of its employment. Growth in services throughout North America since 1950 has been very rapid, and have provided a great number of jobs for females.

- Earnings in the service sector in Prince Edward Island represent a greater proportion of the national average than for goods-producing sectors, but the service sector exhibits extremes in that there is extensive incidence of low-skilled, low-income, and part-time labour, as well as some extremely high-income, professional labour.

- The most important part of the service sector in Prince Edward Island is public administration and defence (a non-commercial service) followed by community, business, and personal services (which also include non-commercial parts, such as health and education).

2.6 TOURISM

Unlike most other sectors of the economy, tourism does not have well-defined edges. Its importance both provincially and globally is well recognized, but the means to measure growth or performance are difficult to identify, as is its total direct and indirect impact on the economy. The nature of the industry, as well, varies widely, and demand for different experiences by tourists covers a broad spectrum. Its status as a growth industry, however, is not in question.

Tourism: Overall Performance

As measured by visitation, tourism in Prince Edward Island grew steadily in the early 1970s, but performance since 1975 has been rather more static, more or less in line with cyclical swings in overall economic conditions. Visitation in 1982 was estimated at a little over 620,000 people during the peak period of mid-May to the end of October. (Most data collected for tourism refer to this period each year.)

Direct spending by tourists is estimated at $49 million, an increase (in current dollars) from $30 million in 1975. Indirect effects of this spending (a national multiplier of 1.8 has been estimated) would enhance this sum considerably. Using these estimates as a basis, tourism accounts for 4-6% of gdp in Prince Edward Island.

An extensive network of infrastructure and plant has developed on the Island centred on the tourist trade. These include 4,185 units in 620 roofed accommodation establishments; 6,121 units in 57 campsites, the vast majority of which are privately run; more than 100 restaurants; and 28 commercial attractions, including museums, historical sites, childrens' attractions, and so on.

A survey of employment in the tourist indusry in 1975 indicated the following major characteristics:

- Total employment was more than 8,000, about 20% indirectly. The sector is a most important source of seasonal jobs, being responsible for about half of all seasonal jobs on the Island in a year.
- Total wages and salaries amounted to $11.5 million.
- Major concentrations of tourism activity were between Summerside and Charlottetown, including the North Shore around the Prince Edward Island National Park.
- Most of the businesses in the industry were small, owner-operated concerns.

Growth of tourism plant since 1975 probably has resulted in additional impacts in terms of employment and income.

Close to 90% of all visitors come to the Island by car or other private vehicle, with most of the balance coming by tour bus or by airplane. Visitation from the other provinces in Atlantic Canada (especially Nova Scotia and New Brunswick) has taken an increasing share of the total recently (increasing from about 47% in 1975 to 60% in 1982). People from Ontario and Quebec form a relatively stable one-quarter of all visitors, although relative shares between the two provinces may vary. Relatively small shares come from parts of the United States other than New England, the New England States, and other parts of Canada in descending order of importance.

A breakdown of age of visitors indicates that two-thirds of visitors are either less than 15 years old, or between 25 and 54 years old. This indicates quite a heavy emphasis on family-type visitation, although visitation by more elderly people (55 years and older) appears to have been increasing in recent years as bus tours have become more popular.

Tourism: Some Characteristics

Tourist visitation to any region or area is heavily influenced by several factors:

- Visitors' travel time and distance.
- Economic conditions in visitors' place of residence.
- Physical attractions of place or area of destination.
- Price levels in place of destination compared to alternative tourist destinations.
- Income and family status of the visitor.

The Island's tourist industry has developed on a base of sandy beaches and warm salt water swimming, a pleasant pastoral landscape, friendly and approachable residents, and more specialized attractions, such as the Charlottetown festival and lobster suppers. The most obvious marketing area is in Eastern Canada and the north-eastern United States, and the infrastructure which has evolved is heavily oriented to families, mostly with young children and usually urban, lower-middle income classes.

In this respect, Prince Edward Island bases an important part of its total economy on the rather narrow foundation of a 6- or 8-week summer season, beginning after schools close at the end of June, and ending shortly before Labour Day. As the major attractions are out-of-doors, a wet or cloudy July or August can mean disaster for tourist operators. Alternative attractions are quite limited and rather parochial, even for family-type visitors.

Expansion of all tourism is more or less assured, but identifying directions of expansion, and types of tourist demand is rather more difficult. Competition is also intensifying all over, both in terms of accessibility of different locations with different attractions, and in the types of tourist services offered. Inability on the part of Island operations to meet this competition may pose serious problems.

There are other challenges facing the Island industry:

- Time spent on the Island may be pleasant and rewarding enough; time spent getting to the Island is likely to be eminently forgettable. A day's drive which ends with a wait of several hours for a short ferry-ride is not a good marketing tool. The situation appears particularly severe on the Wood Islands-Caribou crossing.
- An increasing dependence on Maritime markets may sustain visitation to a degree, but growth in this market is limited by size, by the fact much Maritime visitation may be by young people on an irregular basis (for example, impulse visitation on weekends), and by the fact that Maritimers are increasingly cosmopolitan in their tourist demand.

- Concentration on a very short season means employment is also highly seasonal, overhead costs of maintaining plant are increased accordingly, and ability and/or willingness to invest in new plant inhibited. This is particularly serious as the nature of tourist demand changes and visitors become more discerning, and expect more and better services as a matter of course.

Finally, tourism is an integral part of the Island economy in more than a strictly business sense. Whilst admitting its linkages with other sectors (particularly transportation, large parts of the service sector, and parts of the manufacturing sector, such as handcrafts), there are strong cultural and physical links. Thus agricultural and fishing activities influence landscape and ambience, as well as providing the raw materials for lobster suppers and a tradition of home-cooking. Much of the Island's economic activity, therefore, must have extra regard for landscape as an important resource in its own right.

Summary

- Although precise measures of tourism in Prince Edward Island are difficult to identify, visitation increased in the early 1970s, but it has been relatively stable since 1975.

- Tourism is estimated to account for between 8,000 and 10,000 jobs each year, many of them seasonal, with a total wage bill of as much as $15 million. It is further estimated that between 4 and 6% of provincial gdp is generated by tourism.

- Most visitors to Prince Edward Island came from other parts of Atlantic Canada, Ontario/Quebec, and the north eastern United States. The proportion of visitors from Nova Scotia and New Brunswick increased from about 47% of all visitation in the summer season in 1975 to 60% in 1982. About two-thirds of visitors appear to be families with children under 15 years old.

- Particular challenges facing the province's tourist operators and officials include a very short summer season with rather uncertain weather, delays in getting across to the Island by ferry, and inability or unwillingess to invest in new facilities to meet increasing competition and changing nature of demand.

3. THEMES IN THE ISLAND ECONOMY

Any review of the components of Prince Edward Island's economic base reveal certain themes which either recur frequently or will be required to maintain or enhance future competitiveness. Six groups have been identified:

- Labour Force Themes
- Energy Themes
- Transportation Themes
- Marketing Themes
- Productivity Themes
- Science and Technology Themes

This section of the report will briefly discuss each of these, will outline the most important factors characterizing each, and will offer judgements on which sectors are most affected by each theme.

3.1 LABOUR FORCE THEMES

Seasonal Patterns of Employment

By its nature and historical biases, the Prince Edward Island's economy is often highly seasonal in intensity of activity with concentrations of work in the spring, summer, and fall months, when agriculture, the fishery, construction, and tourism hit their peaks. Characteristics of this phenomenon include:

- Males appear to be much more affected than females, as revealed by Unemployment Insurance Commission data. Indeed, seasonal unemployment among male Islanders is intricately linked to a seasonal labour market, affecting about 35-40% of all jobs in four major sectors. It has been suggested that a seasonal labour market which offers a few weeks work each year to a larger number of people (and UIC statistics indicate that large numbers of people engage in seasonal jobs) is an implicit or informal form of work-sharing, to allocate scarce work among more people. It is also probable that the extent of seasonal employment patterns is linked quite closely to a well-developed "unofficial" economy, data on which escape conventional measures.

- Seasonal patterns of work tend to inhibit skill development and, thereby, labour income and productivity. Choice of work becomes opportunistic, and transfers between different kinds of jobs requiring low levels of skills are encouraged. The employer has little commitment to provide on-the-job training, the employee has little incentive to undertake such training.

- Seasonal operation of plant means certain inefficiencies in running that plant as overhead costs per unit of output increase accordingly. This is particularly so for the processing of both agricultural and fish products, where investment in machinery and equipment can be high, unless the plant is quite old and any initial investment has already been written off.

Skill Levels in the Island Labour Force

Development of skills in Prince Edward Island is inhibited for several reasons:

- Biases in the structure of the Island economy emphasize relatively low value production of goods or provision of services, frequently with marked seasonal fluctuations.

- Industry tends to be undercapitalized relative to Canadian averages, relying more on a relatively abundant supply of labour.

- Alternative economic opportunities on the Island which can offer the potential for skill development are relatively few. This means that individuals with the initiatives to improve skills are usually forced to look away from Prince Edward Island to achieve their goals. Lack of alternative job opportunities in turn encourages lower participation rates, and lower skills depress family incomes. The emigration of people from the province to find work and acquire skills, however, has also meant that the "provincial labour force" is bigger than that actually resident on the Island, and there is considerable potential for industrial development to lure exiles home.

- Lower than average skill levels in Prince Edward Island can be said to devalue one of its most precious resources: its people. Human resource development in the province, therefore, appears a prerequisite for other forms of economic advance. The high-school system establishes a very firm footing for such development, and there are more university students per capita on the Island than in most other provinces.

3.2 ENERGY THEMES

Island concerns with energy costs find most vocal expression over electrical power prices. In most respects, however, energy in all its forms in Prince Edward Island is very close to being the most expensive in Canada. More so than the other provinces, there are no native sources of energy to speak of (with the exception of fuel wood) and the province is, to quite an extreme degree, dependent on outside sources of power.

This extreme is best illustrated by consideration of electrical generation, which provides about 10% of the province's energy demand. The installed generating capacity in Prince Edward Island burns oil. An alternative to this rather expensive means of generation came in 1977 when cheaper power began flowing through a newly completed submarine cable from New Brunswick. The province now takes some 90-95% of its electricity from New Brunswick, and capacity on the Island has been relegated to back-up status. Even though the majority of power consumed is now from a cheaper source, costs to Islanders are still significantly higher than in other parts of Canada, and these costs have been increasing rapidly during the late 1970s and early 1980s. The cost of 750kWh for residential use at the beginning of 1982 was $75.75, compared to a national average of $29.99. Businesses on the Island paid $36,765 for 400,000 kWh at the same time, more than double the cost in the closest other province, and four times the cost of Manitoba's $9,257. Both households and businesses have responded to these high costs by reducing their demand for electricity accordingly. Consumption of all energy in 1981 was 142 gigajoules (GJ) per person compared to 267 GJ nationally on average.

There are two principal areas of concern surrounding the discussion of high electricity costs in Prince Edward Island:

- To what extent have these high costs influenced industrial development on the Island, to make the economic structure predominantly rural in nature and based on small units of production?

- To what extent are high electricity costs at present making the Island less than competitive in attracting new industry, particularly with regard to other provinces close by, and in light of other costs facing Island businesses, such as those relating to location and transportation?

Analytical proof that the costs of power are, and have been, a disincentive to firms to locate on the Island is difficult to establish because of lack of data, and the complexity of price determination for electricity. Examination of current consumption indicates that industries in Prince Edward Island use less power than anywhere else in Canada. In 1971, for example, the costs of fuel and electricity facing Island manufacturers amounted to 1.7% of the total value of all manufacturing shipments compared to 2% nationally. By 1981, the two figures were 3% and 5% respectively. These comparisons, however, must consider the structural differences between the provincial and national manufacturing bases; many more industries at the national level will require greater inputs of energy to produce final output.

Structural considerations also emphasize the extra vulnerability of the Island economy to high power rates. Provincial industrial output is characterized by relatively low-value production from all three major sectors. Almost by definition, margins of profitability in low-value production are slimmer than with higher-value production, and must therefore be regarded as more susceptible to higher input costs. The relatively small units of production on the Island aggravate this problem.

The Island, for example, depends substantially on food-processing as its main manufacturing activity, with important linkages to primary production on the part of both farmers and fishermen. National data for 1980 indicate that the margin of profitability for all food and beverage manufacture was 3.9%. This compares to 7.17% for all manufacturing and an equivalent figure for all industry. As other parts of the Island economy also tend to be low-value producers (for example, a large portion of the service sector), a similar line of reasoning will apply.

An industrial structure characterized by small units of production also poses problems in minimizing costs. Larger factories and plant have more flexiblity in reducing energy input costs by such means as increased bargaining power, internal energy production or recovery facilities (such as self-generation, or waste heat recovery), or ability to reduce other costs in the production process to compensate for higher costs elsewhere. Smaller producers do not have the same degree of flexibility, and are largely price-takers for all their material and energy inputs. This particularly affects farmers, fishermen, tourist operators (all seasonal industries with accordingly high overhead costs), and large parts of the commercial sector.

There are other concerns over power costs. High costs of electricity inhibit ability to increase industrial productivity and therby contribute more or less directly to low incomes and low levels of skill development. As the provincial market is limited, withdrawal of any substantial customer from the electrical grid (for example, closure of an industrial plant) would increase charges to other customers.

On the other hand, high energy costs have stimulated a fair amount of activity among Islanders to explore alternative means of electrical generation and this may, at some stage, further stimulate new industries. The province has already gained a reputation within Canada for innovative exploration of alternative energy schemes, based on both servicing relatively contained communities, or individual households or units of production. The experiments have investigated the potential for low-head hydro power, solar and wind power, energy from biomass, and the feasibility of a 20 MW thermal generating station based on indigenous wood supplies. Accumulated experience in such endeavours may become a significant export industry in future years.

3.3 TRANSPORTATION THEMES

An Island economy with a small domestic market faces extra costs in achieving economic growth and progress. Exports of goods become a substantial factor motivating growth, and location relative to major markets therefore becomes important. Prince Edward Island faces several problems in efficient movement of both passengers and freight which affect almost all the provincial goods-producing sectors, and tourism. These difficulties can be summarized conveniently by reference to the most important modes of movement.

- Ferries provide a vital link to mainland Canada, both for moving people and goods. Peak use in moving people is at the height of the tourist season, and delays of many hours frequently occur at one or the other of the crossing points. This is a source of great frustration to Islanders and tourists and, with respect to the latter, can result in unfavourable publicity. The problem appears particularly acute on the Caribou-Wood Islands crossing, and the seasonal nature of this service makes consideration of one or more additional vessels particularly marginal.

- Rail transportation has been declining for many years as goods have moved increasingly by truck. This has, in turn, led to successive applications to abandon part of the province's rather decrepit rail system even when rail tonnage is starting to increase, and is still very important for transporting potatoes to Ontario. Consideration of an inter-modal system, with trucks being loaded onto rail-cars in Moncton, will be a critical factor in decisions concerning the future of the Island's railways.

- Truck transportation has been responsible for moving an increasing proportion of Island products, particularly to mainland markets. This means that both ferry service and the province's highway system become important parts of the economy. Highways especially cause concern, as peak movement of the major commodity (potatoes) coincides with the so-called spring break-up. This limits access to point of loading at Island farms. Indeed, upgrading and improvement of the province's road system is an important part of the total economy, to cater to tourists (especially as increasing numbers of visitors arrive by bus and expect tours around the Island), and to move goods.

- Increasing numbers of tourists arrive on the Island by air, and air service forms an important part of the everyday running of the Island's economy and government. Although the Charlottetown airport is currently being expanded and modernized, there are quite strong misgivings about the quality of service being provided by carriers, with delays taken for granted and cancellations quite commonplace. These problems will become more acute when the new hotel and convention centre begin operation.

- As non-North American markets for potatoes grow, the Island's ports will become increasingly important as cogs in the machine of trade. Development of port facilities requires special attention.

An efficient transportation system, both within the province and to outside markets, is essential to stimulate further economic growth. This is particularly so as most of the goods moved are high bulk and low value in nature and are therefore particularly susceptible to costs of transporation over varying distances to market.

3.4 MARKETING THEMES

Goods produced in Prince Edward Island must be sold, and the small size of the provincial market dictates identification and penetration of off-Island markets. The small size of most units of production, and of the total Island economy, have posed problems in marketing in the past. Small firms do not have the resources to launch major campaigns, and a small economic system cannot generate sufficient economies of scale to allow small firms access to the information and services necessary to market production effectively. The low unit value of much Island output is also an extra tough selling job in more distant markets, given extra costs of transportation.

This, in turn, has led to inadequate development of marketing skills on the part of Island businessmen. Only where some government involvement has been generated (for example, in marketing potatoes, dairy products, or tourism) do small producers have access to important marketing infrastructure. The Market Development Centre appears to have been particularly successful in allowing small producers to sell their output more effectively.

As markets change rapidly and often quite radically, and as competition in a post-recession world intensifies, the necessity of flexible and responsive marketing will become a most important part of all businesses. Island producers must have access to, or must learn, the requisite skills.

3.5 PRODUCTIVITY THEMES*

Most of Prince Edward Island's economic output tends to be rather low value, there are very strong seasonal biases to employment and output patterns, and capital investment throughout the provincial economy has been lower that the national average for most sectors. Labour/capital ratios are, therefore, high and do not usually translate into a very productive economy on a per person basis. A low level of productivity further translates into low levels of skill development, and the opportunity costs of individual workers remain low. Lack of specialized training means incomes will remain low, and those who have extra skills and experience will be more likely to move elsewhere to find better-paying jobs in the absence of equivalent opportunities locally.

As measured by gdp per person, Prince Edward Island's productivity reached a recent peak in 1979 at 58% of the Canadian average, a substantial improvement from 50% in 1969. Part of the explanation for this relatively low ratio lies in the fact that the employment/population ratio in Prince Edward Island is only 85% of the national average; relatively fewer people were employed in the province than nationally, and even if each person produced the same volume of goods and services as nationally, total provincial output per capita would trail the national figure by 15%. Reasons given for such a low employment population ratio are:

- Higher than average rates of unemployment, which discourages people from joining the labour force.

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* This section is based, in part, on the Conference Board of Canada's Quarterly Provincial Forecast, 8 (3), February 1984, pp. 31-34.

- Low participation rates, which tend to run about 5% below national averages. To a certain extent, both high unemployment and low participation rates have a common cause in lack of jobs, and lower participation rates in Prince Edward Island are also linked to a higher than average proportion of people aged 65 or over.

- The Island has a higher than average proportion of its population 15 years old or younger, who are automatically excluded from labour force calculations.

A bigger part of the explanation for lower than average output per capita in Prince Edward Island is probably due to an output per employed person which was only 64% of the national average in 1981. There are two principal components to this aspect of Island productivity:

- The provincial mix of industry diverges considerably from national average patterns, and depends more heavily on industries, such as agriculture and fishing, in which output per employee across Canada is lower than for all industry. Conversely, high productivity sectors, such as mining and manufacturing, are under-represented in Prince Edward Island.

- Perhaps more importantly, output per employee within industries is lower in Prince Edward Island than nationally. This may be because of less investment per employee, less resource input per employee, or inefficiencies of small-scale production. This applies particularly to manufacturing, construction, and all service industries except public administration and defence.

There are brighter sides to Island productivity. For example, since 1971 the prices of goods and services produced on the Island have risen faster than nationally, and overall living standards are not as far away from national standards as measures of productivity imply. This is mainly because a higher proportion of very young and older people mean more government transfer payments come to the Island, and such important items as the cost of housing being quite low in the province compared to national standards.

3.6 SCIENCE AND TECHNOLOGY THEMES

Developments in science and technology are largely responsible for a bewildering rate of change at all levels of industry today. Much of this has to do with the silicon chip, semi-conductors, small computers, and so on. More than ever before, sophisticated tools of management and production are available to small businesses at reasonable cost.

There appear to be at least three distinct aspects to a science and technology theme:

- Research and development
- Application of technology
- Production of tools

Of these three stages, the first two apply more readily to Prince Edward Island, the first as a new industry, the second as it affects existing industry and resources.

Spending on research and development (R & D) in Prince Edward Island has largely been confined to the Research Branch of Agriculture Canada via its facilities at the Experimental Station in Charlottetown. Even in this establishment, the province has garnered only a very meagre proportion of total federal spending on research and development in the Atlantic region. There have, in addition, been federal funds for smaller projects at the University of Prince Edward Island (UPEI) and by consultants. The provincial government maintains no specific R & D arm unlike many other provinces. UPEI itself is rather limited in its R & D activity as it is solely an undergraduate school, although addition of the new Veterinary College will profoundly alter this situation, probably to the great benefit of the Island. R & D activities in the private sector are also constrained by the predominantly small units of production which characterize the Island economy, although there have been, and still are, some rather surprising and very gratifying initiatives by Island producers.

Other R & D has, still does, and will involve a wide variety of institutions on the Island.

- Centres of higher learning are constantly exploring new research programs, both on the part of individual faculty members and in the form of new institutes or programs. Introduction of graduate education to UPEI via the Veterinary College will considerably enhance this capacity.

- Agriculture Canada's research capability will also be enhanced by the Veterinary College, and other federal research will lie with the Department of Veterans' Affairs in Charlottetown. An intriguing prospect of national leadership in geriatric or aging research may follow from the relocation of DVA's head office from Ottawa to Prince Edward Island, particularly as the department's natural constituency declines and the focus of its attention changes.

- Direct R & D initiatives on the part of the provincial government have been few, although contributions to the Council of Maritime Premiers support, in part, the Land Registration and Information Service in Summerside. This automated system of Deed Registry and transfer, allied to skilled labour in both cartography and terrestrial survey, has potential to be developed as an export commodity. An increasing awareness of the importance of technological innovation on the part of the provincial government, however, will see greatly enhanced support for a variety of R & D initiatives in the immediate future. These will at least encompass activities and research stimulated by the new Veterinary College, and other agriculture- and fishery-oriented issues. There have also been commendable moves towards human resource development such as high-school computer courses and other types of skill-training.

- Although quite small, private enterprise R & D will continue to make solid gains on behalf of Island economic endeavour.

The application of science and technology involves both existing and new industries. It includes the modernization and increased efficiency in office and accounting procedures, and of actual production of goods and services. It also entails development of new industries which do not rely necessarily on proximity to market, and which include such things as various information processing services, alternate energy systems, development of disease-free plant and animal strains, and so on.

There are at least three obstacles which must be recognized and overcome before the full benefits of modern scientific and technological industry can flow to Prince Edward Island:

- Worker skills and awareness must be enhanced quite radically, and new education or training programs may be necessary to achieve this. This may be difficult, as the province has a poor history of retaining its most skilled workers.

- There are still a lot of party lines in the provincial telephone system, and this effectively prevents extensive access by many residents via private lines to computer services over the telephone.
- Unlike most other provinces (including the three others in Atlantic Canada), there is no purely research-oriented technological dispersion point in Prince Edward Island. The Veterinary College will only partly fill this role, and will not provide a substitute for an Island equivalent of institutions such as the Nova Scotia Research Foundation or the New Brunswick Research and Productivity Council.

4. THE ROLE OF GOVERNMENT SPENDING IN THE PRINCE EDWARD ISLAND ECONOMY

Total government expenditures per person in Prince Edward Island in 1981 were $6,441, more than any other province except Nova Scotia (with its substantial Department of National Defence presence), and 115% of the Canadian average of $5,587. Almost half of this total was spent by provincial or municipal governments on the Island, although a substantial proportion of these expenditures come from the federal government in the form of transfers. Total provincial/municipal expenditures per capita in Prince Edward Island in 1981 were about 93% of the Canadian average, but less than 60% of this spending was financed from locally derived revenues.

Overall trends in all government spending have run more or less parallel to economic activity since the late 1960s. There was fairly consistent expansion on a per capita basis up to 1978, then a retreat from this increasing trend as the problem of increasing public deficits became more urgent, as interest rates got higher, and as a mood of restraint set in.

The Forms of Government Spending

Across Canada in 1981 all levels of government accounted for a little less than one-fifth of gross national expenditures. In Prince Edward Island, this proportion rises to almost 45% of gross provincial expenditures with provincial and federal governments accounting for 18% and 15% respectively.

In addition to purchasing goods and services, governments also distribute income directly to individuals by means of programs such as Old Age Security payments, Unemployment Insurance Benefits, and Family and Youth Allowances. In Prince Edward Island, transfer payments in 1981 were $1,804 per capita, of which almost 70% came from federal sources. This compares to an average of $1,425 nationally.

Government as Employer

Government employees accounted for 11.1% of the Prince Edward Island working age population (15 and over) in 1981 compared to 6.1% nationally. Public employment also accounted for 31% of total Island wages and salaries compared to 12% nationally. The total impact of public sector employment is relatively more important to Prince Edward Island than these figures indicate, as there is more security of employment, and wages are much higher. This is particularly so as the federal government expands its share of the Island labour force by transferring Department of Veterans' Affairs jobs to their new headquarters in Charlottetown.

The Wider Effects of Government Spending

A general, if rather imprecise, measure of the wider effects of government spending on the Island indicates that:

a) One dollar of transfer payment to Island residents contributes to 19 cents of earned labour income indirectly.

b) One dollar of direct government spending (for example, on wages and salaries or on purchasing supplies and equipment) generates a further 79 cents of earned labour income.

Combining these two effects resulted in an estimated aggregate net contribution to the Prince Edward Island economy in 1981 of $416 million. Further analysis based on government spending on the Island indicates that, in 1981, up to 60% of the provincial gdp is linked either directly or indirectly to government, and about 35% of the working age population relies on government for income to some degree.

Types of Federal Spending

The federal government was responsible directly for some $596 million of spending in Prince Edward Island in 1981, an increase of 10.7% annually on average from 1977's $397 million. The largest components of this spending were transfers to the province (30%), transfers to persons (28%), and current expenditures on goods and services (22%). The largest individual expenditures were under taxation agreements (17%, mostly Equalization Payments), Old Age Security payments (10%), and payments under the Unemployment Insurance Act (9%). The last of these has become relatively more important during the recession of 1981-1982.

Other important items in federal spending on the Island (although relatively quite small) include transfers under Established Programs Financing arrangements, (for post-secondary education and health programs), regional economic expansion initiatives, family and youth allowances, payments under the Canada Assistance Plan, and payments under the Canada Pension Plan.

Types of Provincial Spending

Total provincial spending in 1981/82 (including spending funds received from the federal government) amounted to $376.5 million, up from $262 million in 1977/78, an annual average growth rate of 9.5%. The most important individual components of provincial spending were education (24%), health care (17%), transport and communications (12%), resource conservation and industrial development, and social services (11% each), and debt charges (10%). There have been increases in the shares of debt charges, transportation and communication, and social services since 1977/78.

The Role of Government Planning Initiatives in the Prince Edward Island Economy

The modern phase of regional development initiatives in Canada has its origins in the final report of the Royal Commission on Canada's Economic Prospects (the Gordon Commission), which was published in 1957. To overcome the dilemma of high unemployment and low incomes in the Atlantic region, the report made a number of recommendations with respect to increasing the mobility of surplus labour and attracting capital investment into all industries, particularly the primary sector. In later years, the Gordon Commission was to be much criticized for its lack of emphasis on the manufacturing sector as the principle instrument in encouraging regional development.

The Commission's recommendations played an important role in the formation of policies which immediately followed, such as the Atlantic Development Board (ADB), the Agricultural and Rural Development Administration (ARDA), and the Fund for Rural Economic Development. There were problems within Prince Edward Island in making the appropriate use of these programs and this put pressure on both levels of government to consider establishing a comprehensive development strategy for the Island. After extensive discussions on the costs, objectives and appropriate strategies, the Prince Edward Island Comprehensive Development Plan was signed in 1969.

The original objectives of the Plan identified increasing agricultural output as the chief engine of growth, primarily through expanding the area of land under agriculture by 50%, but also through improving yields and incomes. This, it was expected, would increase the size of the processing sector and encourage developments in the rest of the economy. But these quantified objectives soon aroused a storm of controversy. The public perceived that there would be enforced reductions in the number of farms and other measures that would radically change the Island's rural lifestyle and social infrastructure.

In addition, serious questions were raised on the appropriateness of using agricultural output as the engine of growth. Little attention was paid to marketing, of either processed or raw products, or to the limited potential of the primary sector to increase incomes or employment. As with the Gordon Commission, the Plan was criticized for its lack of emphasis on promoting growth in the manufacturing sector.

The original objectives of the Plan were changed in response to these criticisms; gradually attention was turned to attracting new industry, although these new industries were not always appropriate for the Island environment. Through the 1970s, planning initiatives covered many, if not all, facets and sectors of the Prince Edward Island economy, including the fishery, transportation, and agriculture.

There were many successes to the Plan: improvements in educational infrastructure, and in the general education received; the creation of extension and other services to the farm community; and a general improvement in the level of provincial government services available to the public. By substantially increasing government spending, the Plan provided both a direct and indirect stimulus to most sectors in the Island economy, and this in part at least was responsible for the generally buoyant predominance of the provincial economy during the 1970s.

At the same time, there were also many problems; the plan was criticized throughout the seventies for its lack of emphasis on the planning process, in particular, public participation. The original objectives of the Plan, which many considered to be its strong driving force, were so watered down by revisions to the agreement through the 1970s, that many considered the momentum for economic change and development was lost by mid-decade. In addition, changes to government, administrative procedures, and planning personnel complicated many initiatives.*

By the late 1970s, the Plan was in many ways a shadow of its former self; it had lower priority among both federal and provincial governments, and the province's attention was increasingly turned to other federal sources which provided a much greater proportion of the federal funds on Prince Edward Island. Despite its many problems, it was in many ways a unique government planning endeavour in the North American context and one which will provide many useful lessons to the province in any new planning directions.

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* For a more detailed treatment of this process, refer to F. T. Walton, "Canada's Atlantic Region: Recent policy for economic development", in The Canadian Journal of Regional Science, 1 (2), Autumn 1978, pp. 35-51.

5. GENERAL CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS FACING THE PRINCE EDWARD ISLAND ECONOMY

As the discussion in previous sections has illustrated, the economy of Prince Edward Island has seen many changes and developments over the past twenty years. Many of these changes have been connected, directly or indirectly, to the activities of the federal and provincial governments through the Comprehensive Development Plan. As the era of this development plan draws to a close, both senior levels of government must address the form of its replacement. This presents opportunities to reflect on the successes and failures of previous government policy with a view to what lies ahead for the Island economy, and how policy might maximize these opportunities.

To explore these opportunities for growth, we have chosen a format that sets out challenges, opportunities, and constraints.

The **"Challenges"** state the overall objective for developing the economy.

The **"Opportunities"** set out the options and instruments available.

The **"Constraints"** discuss the factors that may limit the development of various opportunities.

This section will explore general challenges, opportunities and constraints which affect the total provincial economy. Section 6 will explore these factors as they apply in more specific detail by sector.

5.1 CHALLENGE: TO ENCOURAGE THE CONTINUING DEVELOPMENT OF THE ECONOMY OF PRINCE EDWARD ISLAND

Opportunities: As most people are naturally interested in seeing the economy of Prince Edward Island grow and prosper, this challenge may be a statement of the obvious. The interesting discussion arises in what objectives and mechanisms are chosen to achieve this.

As will be seen through the remainder of sections 5 and 6, the range of objectives and opportunities is fairly extensive. For example, are the goals to increase output, increase per capita incomes, reduce unemployment, or some combination of all three? The three are certainly not exclusive but neither do they go necessarily hand in hand. It may not be feasible to achieve all the desirable objectives. Furthermore, the choice of the appropriate mechanisms to achieve these goals becomes an important and difficult decision.

The point to be stressed here is that the path towards economic development and growth is not an easy one. Along the way, there are some hard choices to be made. For example, we may be able to increase output by expanding the food processing sector, as we have suggested later on in this report. There are many reasons why it may be advantageous to encourage further developments in this sector apart from employment creation: the availability of excellent primary resource, the previous experience of local entrepreneurs and managers in this area; the potential for research and development (R & D) spinoffs in local institutions and the potential for strong growth in markets for processed food products.

But on the other side, it must be recognized that there are some drawbacks to focus on this sector. In particular, it may do little to encourage more stable employment patterns or higher per capita incomes as jobs created in these industries tend to be seasonal, low-skilled, and low-wage.

Alternatively, we might choose to attack the problems of low incomes and seasonal employment by developing new heavy manufacturing industries, where jobs tend to be year-round and wages higher. But the experience of all the Atlantic Provinces in trying to attract heavy manufacturing industries in the 1970s, has taught us to be wary of these opportunities. While the benefits are considerable from successful projects, the risks, capital, and infrastructure costs are all extremely high. Several spectacular failures of heavy industries have made all levels of government cautious in directly encouraging developments of this type.

Again, it is popular at present to establish high technology industries which deal with the surging global demand for information, and research and development. Such industries are "footloose" in that location of the producing unit need not necessarily be close to final markets given modern communications technology. Futhermore, such industries would probably enable traditional goods-producing industries in Prince Edward Island to become more competitive. There is the added dimension of diversifying the Island's export base.

The other side of this coin sees no tradition or familiarity with such industries in Prince Edward Island, and a substantial vacuum of requisite labour skills. Training labour to work in the industry may instead encourage emigration to more established areas of technological innovation, and in the end, do little to advance the Island's industrial base, incomes, or export potential.

It must be recognized that Prince Edward Island, as the smallest province in Canada, is dependent on forces that are frequently beyond its control. Whether it be a change in potato prices or a shift in the use of technology, the Island must keep a close watch on these changes and interpret their impact on the economy. The key to successful adaptation is flexibility, whether it be in the labour force, or in the actions of government or firms. Erecting artificial barriers, as for example, against labour mobility, may be seen to have desirable short-run benefits. But over the long run, it will do little more than impose costs on society and retard growth, through reducing the efficient allocation of resources.

While recognizing that on occasion, it is necessary to protect certain sectors from the effects of a drastic change in the economy, policy makers must be cautious of their actions in this area and keep flexibility as their maxim. This flexibility will be enhanced in two ways. Firstly, development of established industries (especially agriculture, the fishery, associated manufacturing, and tourism) should continue. Secondly, new opportunities to develop new industries will arise and should be encouraged, especially as they involve development of new export-oriented service industries. The overall process of such development must also emphasize education and training at least to widen the options facing Islanders in finding work within the province of their residence.

Constraints : All economies face constraints of various types and magnitudes in their development. Prince Edward Island shares many problems with the other Atlantic Provinces, such as distance from major markets, and lack of capital and skilled labour. In addition, it faces some constraints which are relatively unique; the small size of the Island economy, dependence on the ferry system for transporting goods and people, and the highest electrical energy costs in Canada.

5.2 CHALLENGE: TO ENCOURAGE GROWTH OF INDUSTRIES IN WHICH PRINCE EDWARD ISLAND HAS A COMPARATIVE ADVANTAGE

Some goods and service industries face primarily local markets. Others must export a majority of their product either to other Canadian provinces or to other countries. It is for this latter group that the principle of comparative advantage becomes especially significant.

Comparative advantage is a simple idea, yet frequently misunderstood. For example, Ontario can produce trucks cheaper than Prince Edward Island because of factors such as the availability of steel, market area, cheap energy, and so on. Prince Edward Island may be able to produce potatoes at the same price as in Ontario, or at a cheaper price. Given these circumstances, however, it will be more efficient for Prince Edward Island to commit its resources to potato production while Ontario produces trucks as each province has a comparative advantage in these products. The theory does not say that potatoes cannot be grown quite cheaply in Ontario, or trucks not produced in Prince Edward Island, but that there are relative differences in the efficiencies of producing one commodity in each province which makes it more profitable for each province to specialize. Prince Edward Island's demand for trucks is more efficiently satisfied by trading potatoes to Ontario, and similarly for the latter province's demand for potatoes.

In the real world, the principle of comparative advantage becomes much more complicated and frequently obscured. Countries and provinces produce and engage in trade in an endless range of commodities. Natural comparative advantage, such as Prince Edward Island may have in potatoes, can be confused by the range of tariff and non-tariff barriers among its major competitors.

It may indeed be difficult to ascertain exactly where the comparative advantage lies when so many factors require consideration, factors such as productivity, price of outputs, quality of product.

In Prince Edward Island, however, focusing on comparative advantage becomes critically important. Some of the major industries (agriculture, the fishery, and related processing) are export-oriented and must remain so to survive. The small size of the Island economy means that the province does not have the option of trying to encourage domestic consumption as a way of replacing export markets.

Opportunities Prince Edward Island has a comparative advantage in a number of primary products that currently make up the bulk of its exports off the Island. These include:

- Potatoes, both table and seed stock.
- Cole crops, primarily to meet local demand.
- Lobster and scallops.

Given the Island's commitment to an economy based on agriculture and the fishery, it is not surprising that the Island also has a comparative advantage in food processing, although input costs are relatively high.

It becomes more difficult to discern where comparative advantage may lie in goods-producing industries which are not tied to the resource base. This does not mean that comparative advantage in these industries does not exist, only that it is not as obvious.

There is hope at the moment that the Island may develop a comparative advantage in some of the new bio-technology or information science industries, and thus be able to attract these industries to the Island or generate home-grown entrepreneurs in this field. Some argue that the quality of Island life, along with the potential spinoffs from new research institutions such as the Veterinary College, could stimulate growth in this industry, especially since traditional impediments to the development of the manufacturing sector on the Island (distance from markets and high transportation costs) are not thought to be especially significant for these industries. Certainly, it will be a big challenge to establish such an industrial network in Prince Edward Island and difficulties will have to be overcome. This would entail extensive studies on their viability before any commitments are made, but should by no means exclude careful consideration of the possible comparative advantage that could be developed.

Once more, skill development can be emphasized as a neglected area of comparative advantage. The experience and success of economic societies, such as Japan or Switzerland, relatively short of natural resources, but with willing labour of sufficient aptitude, demonstrate the progress which can be made by emphasizing human resources.

The opportunities are many and the policy makers must use caution in committing scarce resources to stimulate growth in any industry or sector. The range of incentives is extensive but there is one factor - marketing - which must also receive greater prominence in future in government incentive programs. Previous development efforts have too often ignored the demand side of any development project.

Constraints The constraints are many. There is the initial difficulty in determining where comparative advantage may lie. This is especially true for new products, or industries which utilize new technologies. There are a range of factors which inhibit the overall growth of industry such as lack of equity and other sources of capital, high energy and transportation costs, small local markets, and the difficulty in introducing new technologies into existing industry.

One very important constraint is the difficult trade-off between supporting one industry in favour of another. From the economist's point of view, it may be easy to argue in favour of emphasizing a certain sector in government policy. But for the politician, the choice between abandoning an existing industry which is in decline but which remains the mainstay of a community, in favour of a more competitive alternative with rather uncertain prospects may be very difficult.

5.3 CHALLENGE: TO ENCOURAGE GROWTH IN PRODUCTIVITY AS A KEY MEANS OF IMPROVING INCOMES AND THE PROFITABILITY OF THE ISLAND'S PRIVATE SECTOR

Earlier in this report, the improvement in personal incomes since the 1960s was discussed in some detail. The growth in the size of the public sector and income transfers to individuals from the federal government was also outlined. The evidence suggests that there is a strong correlation between these two sets of variables: that the growth in the latter category has had a direct bearing on improving incomes.

Prince Edward Island, in common with the other Atlantic Provinces, depends heavily on the government sector for both incomes and expenditures. While this may be viewed on occasion as a mixed blessing, the benefits over the years cannot be denied. But as the evidence has shown, the rate of growth of government expenditures and transfers started to decline in the mid- to late-1970s. Concerns about high deficits on the part of both senior levels of government are likely to restrict the growth of these expenditures for several years to come. This has important implications for an economy such as Prince Edward Island, so dependent on the public sector. It must look elsewhere for its development opportunities.

The key to growth in the private sector lies in productivity improvements. Productivity is frequently measured as output per worker. As such, it measures the skills and abilities of labour as well as the efficiency of capital. For example, a manufacturing plant may have low productivity either because workers do not have the skills to operate the machinery efficiently, or because the equipment they use is outdated and inefficient, or some combination of these two factors.

Productivity is normally significantly lower in each of the Atlantic Provinces than in the rest of the country. This does not mean that workers in this region do not work as hard as those elsewhere in Canada, but instead reflects a number of other factors. Primarily, it can be linked to the structure of our goods-producing sector, where activity is concentrated in the primary sectors and related industries, characterized by low investment levels, low skills, and frequently seasonal operation.

Poor productivity has also become a national concern in the early 1980s. Unless the national economy can generate stronger productivity improvements in years to come, Canada may find itself outclassed and outpriced in international markets.

This is of equal importance to Prince Edward Island. If the economy of the Island is to continue to grow and prosper, it must either maintain or improve its share of existing export markets as well as development new products and markets. This will only be possible through strong productivity improvements in the future.

Opportunities There are many opportunities available to improve productivity:

1. Improve labour skills, encouraging the development of entrepreneurs.
2. Increase investment in goods-producing industries, in particular encouraging the use of more modern technology which could enhance international competitiveness.
3. Improve the efficiency of service-producing sectors.

4. Encourage the application of new technologies to existing and potential private sector firms.

Constraints The most serious immediate constraint arises from the trade-off between capital and labour. The immediate need for investment in order to improve the overall competitiveness of the Island's goods-producing sector will inevitably mean a short-run displacement of labour. Not only is this serious from the individual's point of view, it has serious implications for the governments which must, in some manner, support the economy in its transition period. There may be pressure on policy makers to protect jobs at the expense of making new investments, or they may feel obliged to maintain employment in an obsolete industry that otherwise should have been allowed to decline. In the long run, these measures will be to the detriment of society, as they will protect and entrench stagnant industries or trained workers in obsolete job skills, thus hindering natural adaptive processes. But in the short run, there can be no denying that the difficulty in making this choice is indeed a constraint for policy-makers.

Other constraints to improving productivity are economies of scale (very important given the small size of the Island economy); the structure of its existing industry, with the emphasis on low productivity, primary products; the difficulty for existing industry in getting easy access to information on new technologies; and the scarce financial resources of both the private sector and government in Prince Edward Island. There are also rather intractable attitudes towards increased productivity, from the farmer who regards it as merely adding to surplus production, to the fishermen who regards technology as a real threat to his job and livelihood.

Constraints, however, should not be regarded as insurmountable. Many of the constraints which previously were thought to hinder developments on the Island, such as location far from markets, or high transportation costs, may not be as significant for some new opportunities that are appearing on the horizon. The move towards smaller, more flexible production units (for which economies of scale are less important, or at least less location-specific), and the new manufacturing revoluton will allow existing industries on the Island to improve productivity significantly, or may reduce the reluctance of high productivity firms to establish on the Island given a benign investment atmosphere.

5.4 CHALLENGE: TO ENCOURAGE THE CONTINUING DEVELOPMENT OF THE LABOUR FORCE AS A KEY COMPONENT OF GROWTH IN THE PROVINCIAL ECONOMY

Earlier in this report, we referred to the substantial changes in the labour force over the past 15 years, such as the significant increases in employment of women, and the improvement in labour incomes. The development of educational institutions has greatly enhanced the general level of educational achievement and increased more specialized skill levels among the Island's labour force, although educational attainment on average still lags slightly behind national levels. Improved labour force skills are a vital component of improved productivity and must be stressed for that reason.

Opportunities The development of the labour force could be enhanced through a variety of mechanisms:

- Encourage the development of industries/sectors which have high wage, high productivity levels, and provide stable, year-round employment.
- Continue to improve post-secondary and technical training facilities.
- Encourage flexibility and adaptability among the Island's labour force, particularly with respect to skill training.
- Minimize barriers which inhibit the mobility of labour. The transfer of skills takes place most effectively in a flexible labour market, where new immigrants are welcomed

for the experience they can bring to an economy. Losing people, by emigration, particularly those with skills, may be more difficult to accept, although this is a natural process, particularly when the employment opportunities in an economy are relatively limited.

- Reduce the high unemployment rate by re-training the unemployed of one sector for employment in another.

- Encourage the development of entrepreneurship in formal education programs.

Constraints Numerous constraints will reduce the policy maker's ability to act in many of these areas. By focusing on high productivity, high wage industries, one may actually reduce employment. And the displacement of low wage, less educated workers imposes significant social costs (see Challenge 5.3).

The small size of the Island economy and the current mood of government restraint inhibits the province's ability to offer all the formal education and skill training opportunities that it would like to. Provincial resources to commit to post-secondary education are most unlikely to see strong growth overall in the medium term, although there will of course be an increase in funding for specialized activities, such as the Veterinary College.

The high unemployment rate is of particular concern as unemployment itself is a factor in reducing productivity. The longer a worker is unemployed, the less likely he or she is to maintain the level of skills held in the previous job.

6. CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS: SECTORAL DETAILS

The previous section has outlined overall challenges, opportunities, and constraints facing the Prince Edward Island economy. All of these apply, more or less, to each principal sector. There are, in addition, more specific details by sector, and these are reviewed in this section.

6.1 CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS IN AGRICULTURE

The Challenge

There are two major parts to the challenge facing Prince Edward Island's agricultural sector:

- To reduce year-to-year fluctuations in agricultural income.
- To improve returns to farmers.

The Opportunities

There are several means to help meet the challenges outlined above.

Diversify Production An over-reliance on production of one or two commodities means that farm incomes and returns will vary more or less directly with prices for, and production of, those commodities. There is a reliance in Prince Edward Island in this respect on potatoes, although there have been some attempts at diversification away from a narrow base. In some cases (such as tobacco), these have been successful, in others (for example, pork and beef production) intense North American competition has put relatively high-cost producers, such as those in Atlantic Canada, at a distinct disadvantage. There remain opportunities for product diversification, which may not necessarily be confined strictly to agricultural production. Most of the Island's forests are privately held in small woodlots attached to farms (refer to the subsequent section 6.3, Challenges, Opportunities, and Constraints in Forestry) and more production could come from this resource. Tourism offers opportunities in the shape of Bed and Breakfast residential accommodation in farm houses.

In agricultural production there is considerable potential to increase output of cereals other than strictly for rotation with other cash crops, and to meet regional demand for feed grains. This would involve a great deal of research with suitable varieties and strains suited to the Maritime growing season, as well as suitable methods of seeding, cultivation, and harvesting.

Improve The Means Of Production At first sight, it may seem counter-productive to advocate more efficiency in a sector already characterized by over-production and, by and large, very efficient farmers. Improvement of the means of production in this context essentially involves maintaining an established level of output by more efficient allocation of inputs. At the level of the production unit, this could include:

- Better trained, more adaptable management which could result, for example, from advanced scientific, technical, and managerial education for farmers, either in post-secondary (degree- or diploma-granting) courses, or by specialized extension courses.

- Adoption of technology and other capital improvements appropriate to an optimum size of farm, to be determined by individual commodity. This would probably include introduction of small computers in running the farm, and examination of the costs and benefits of any proposed capital improvement.

At the level of the provincial agricultural sector, improvements in the means of production could encompass:

- Improved infrastructure, to generate economies of scale which would enhance collection and re-distribution of primary production, disseminate information, and promote the rapid adoption of new ideas and technologies by the industry.

- More research into crops and animals to improve varieties, breeds, and strains available for production in Island conditions, as well as for equipment to produce commodities.

- Enhance "technology transfer" by expanding the quality and quantity of extension services.

Stabilize Prices This can be achieved in one or other of two ways:

- There can be some kind of price stabilization scheme, whether run publicly, privately, or a mixture of the two. This already exists for hog farmers and could conceivably work also for other producers. Such a scheme irons out the more extreme variations in price, and assures some return to farmers in bad years.

- There could be a system of forward contracting with major buyers. In Prince Edward Island, this already exists for a portion of the potato crop (that which goes for processing) and, in a sense, for all the tobacco crop (by pre-negotiation of price before planting). Such a scheme gives a good measure of protection to farmers during periods of low prices, but may deny them the chance to take full advantage of high prices.

Increase Processing Capacity Forward contracting in Prince Edward Island would probably require increased processing capacity, preferably dealing with a greater variety of foodstuffs to assure year-round operation. A more diversified food processing sector would not only draw on a wider range of agricultural production as raw material inputs, but would also increase actual volumes of production, and possibly could incorporate fish processing in the same plant or in closely associated facilities.

Improve Marketing As noted in the sector review, farmers as individual producers have virtually no capacity to seek new markets or influence the price they receive for their produce, yet these are vital to any attempt to stabilize incomes and improve returns. Relatively assured markets, however, are difficult to procure and keep, and require some organization either on the part of farmers acting in concert, or on the part of provincial and federal authorities. Some steps have already been taken, for example, for potatoes, poultry and eggs, and tobacco. A more extensive, nationally administered scheme has been contemplated for potatoes. An increase in the use of forward contracts could help in assuring markets and prices.

Control Input Costs Costs facing farmers have increased steeply during the past 10 years, and, as with prices and markets, individual farmers can do little to influence the costs of inputs. Some kind of concerted action (for example, by means of producer co-operatives) would give rather better controls by means of bulk-buying and negotiation with input suppliers.

The Constraints

Constraints to achieving more stable and better returns to farmers are lodged in the current nature of production, how it is regulated, and costs faced by farmers.

- Agriculture has become very efficient since 1945, with the result that a great deal fewer farmers can supply more output than before. This improvement in the means and efficiency of supply has not been matched by a corresponding increase in demand. Local demand is limited and, for certain commodities, involves keen competition from outside the region (for example, beef, pork, and cereals); national demand is limited for similar reasons; and international demand may be inhibited by the price of North American produce. Great improvements in productivity, therefore, have resulted in accumulation of stocks of many commodities.

- Regulation of production and markets has generally resulted in a greater degree of stability and improved returns for farmers. At the same time, there has been some consumer resistance to higher food prices when perceived as being due to regulation of any commodity, or against the accumulation of stocks, when perceived as being wasteful. There is concern among economists, as well, that regulation affords artificial protection to marginal producers, and thus inhibits the optimal allocation of resources between sectors.

- A more specific institutional concern affects capacity to sell feed grains in regional markets. Western grain is shipped to Atlantic Canada at subsidized freight rates under the Feed Freight Rates Act. There is demonstrated capacity within Prince Edward Island to grow high energy grains (including corn) if western competition were reduced to "natural" levels. Removal of FFRA subsidies, however, would require a substantial change in direction in the use of Island farmland, one which probably could not take place overnight. Effects on local stock farmers are uncertain.

- High costs for certain inputs rather severely inhibit increased efficiency in both the primary production and processing sectors. Farmers face high interest rates in capitalizing their operation for rather uncertain returns; extrememly high energy costs (especially electricity) inhibit further expansion of processing capacity on the Island, and particularly affect certain types of enterprises such as stock farming; and both farmers and processors face high costs in getting output to market.

6.2 CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS IN THE FISHERY

The Challenges

There are two major challenges facing Prince Edward Island's fishery:

- To improve returns to fishermen.
- To diversify the fishery.

The Opportunities

Improve Resource Management Managing a migratory common property resource which varies rather significantly over time is very difficult. Removal of management function from actual catch function poses extra problems. Some management steps may be more obvious than others. One is, for example, to increase legal carapace size on lobsters. This would mean only bigger lobsters were taken; would improve returns per unit of catch; would make a bigger proportion of the catch available for the higher-value fresh market rather than for canning; and would allow smaller lobsters an opportunity to reach bigger sizes and more chances to spawn offspring. Equally, number of scallop meats per pound could be reduced to maintain stocks. There is a potential for enhancement of certain high-value stocks such as lobsters and scallops.

Improve Handling Methods Major markets for Island fish are the United States, and the better end of these markets (for example, in the restaurant trade) demands high quality. Small boats and high labour/capital ratios usually have involved primitive methods of handling the catch, particularly for groundfish and pelagic species. The problem on the boats is compounded by similar problems in handling at the dockside and when entering processing lines. As groundfish and pelagic species caught inshore in any case may only be available for catching in very large numbers within very confined periods of time, extra attention to quality control at all stages from water to leaving the processing plant is essential.

Improve Catch Methods Substantially, this involves building better boats, or fitting existing boats with better equipment. Low returns in the past have severely hampered acquisition of better boats and/or equipment, and capital/labour ratios have remained relatively low. Productivity, in consequence, has also remained low. A trend since the mid-1970s to reduction of numbers of smaller boats (less than 10 tons) indicates a willingness on the part of fishermen to capitalize to a degree, and perhaps should be encouraged. Better boats would not only mean a more productive fishery per unit of effort, but should also incorporate greatly improved safety features.

Improve Marketing With improved quality must also come improved marketing. As with farmers, individual fishermen are not usually privy to sophisticated information about markets. For certain species, marketing must be done through mainland brokers. Lack of economies of scale within the fishing sector inhibits marketing efforts, but initiatives could come from federal and provincial authorities.

Diversify the Sector The Island's fishery is rather vulnerable because of an over-dependence on lobster, with extra output from scallops and lower-valued groundfish, pelagic species, and marine plants. Extra diversity in the fishery could come from several sources:

- More emphasis on species which form only very minor parts of the fishery at present but for which proven markets exist. Examples are rock and snow crabs. To expand Island efforts to take these species would require new licenses.

- Offshore fishing could be added to the Island's predominantly inshore effort. This would, in all likelihood, necessitate access to Gulf stocks of groundfish, and would probably require reopening of the Georgetown processing plant and re-assignment (or confirmation) of allocations and trawler licenses at this plant. Overall quality of Island fish processing would probably be enhanced by this means if we assume that more sophisticated vessels entail correspondingly more sophisticated handling capacity.

- Aquaculture has long held promise for controlled cultivation of oysters and mussels in particular. Any expansion in this area would require considerable commitment of public funds to explore best methods of cultivation, optimal size of operation, and potential markets. There is also the possibility of enhancing certain stocks, such as scallop, lobster, or tuna.

- Diversification of fish production is possible for relatively high-value, specialist markets. An example is to manufacture simulated fish delicacies (such as simulated scallops or lobster) from relatively low-value species ~~aimed~~.

- Further development of the sports fishery could go hand in glove with tourist development. This, at the very least, should extend to tuna and could equally involve improving habitat for various anadromous species, such as trout and salmon, to encourage freshwater fishing.

Increase Fishery Research This would ideally complement the research into stock management and related issues currently carried out by the Department of Fisheries and Oceans, and be oriented at development of new fisheries, methods of aquaculture and stock enhancement, examination of new fisheries products, and methods to prepare fish for consumption. Some research into quality enhancement methods is certainly warranted. An opportunity will arise shortly to expand research into many aspects of the fishery when the Veterinary College is built and begins operation.

The Constraints

Perhaps more than for most other sectors in Prince Edward Island, there are intractable problems in attempting to change the structure of the fishery. The reasons for this are rooted in economic, societal, environmental, and biological factors.

- There has traditionally been great resistance to, or misunderstanding of, resource management regulations on the part of fishermen. Often, such management requires several seasons to be effective, and this requires fishermen to forego all or part of their income for this length of time, even though there will probably be greater benefits over the longer run. A considerable degree of inertia in fishing communities may make acceptance of biologically-based resource management difficult.

- Management of a common property resource can, at best, usually only be approximate. Precise biological or environmental characteristics are not perfectly understood, and can vary considerably between seasons. Incorrect judgements which understate the amount of stocks increase fishermen's criticism of management; those which overstate stocks can threaten existence of a fishery. Either way, mistrust between managers and fishermen is not improved.

- Any other moves in the past to introduce changes in the fishery have usually been sternly resisted by fishermen themselves. Fishing forms an integral part of life in many Island communities, and naturally threats to erode this life are treated with suspicion. As fishing may only form part of a season's annual income (as it rotates with income from other occupations or sources, such as Unemployment benefits), change may not be perceived as either necessary or desirable.

- Over-dependence on a fleet of small inshore boats makes improvements of methods and efficiency of catch difficult. Such vessels are rather strictly limited by weather conditions, their capacity to carry or store fish is limited, and carrying, storage, and unloading facilities usually reduce quality of the catch.

- Capital requirements to improve vessels and methods of catch may be considerable, and beyond the means of most fishermen.

- Expansion or improvement of processing capacity would encounter extra high costs of electricity, particularly if freezing plants are required.

- Pilot aquaculture projects to date have given indifferent results in spite of a great deal of advice and financial support from government authorities and agencies. The reasons for this are unclear, but probably involve a mixture of lack of commitment or interest on the part of Island fishermen, lack of decision over what constitutes a viable aquaculture operation, and uncertainty over consistency of product, its acceptability in markets, and prices. There are also indications that aquaculture development in coastal areas closer to major markets (for example, in northern New England) is proving to be more viable.

6.3 CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS IN FORESTRY

The Challenge

There is one challenge for the Island's forestry sector:

- To increase output from Prince Edward Island's woods.

The Opportunities

Development of Island woods is closely linked to the agricultural sector by the fact that most reserves of wood are on privately-held, small woodlots, usually parts of farms. Choices to develop the resource are several.

Improve Markets for Island Wood Markets are of three quite distinct kinds:

- Fuelwood, either for households, for industry in various forms (such as wood chips), or for thermal electrical generation.
- Saw-wood either for use in provincial sawmills, or for trucking to mainland mills; an extension of this would see further fabrication involving manufacture of wood into such goods as furniture or pre-fabricated homes and buildings.
- Pulpwood, for shipping to mainland pulp and paper mills.

Further development of any of these would require ancillary development of an effective gathering, marketing, and distribution structure. A precondition, as well, would be a comprehensive inventory of quantity, quality, and accessibility of resource supplies.

Undertake A Longer-Range Woods Management Program As supplies of fibre available for Atlantic Canada's sawmills and pulpmills deteriorate, both in terms of quantity and quality, increasing attention turns to management of available supplies for the future. Prince Edward Island's forests are well-located to take advantage of markets for wood within an expanded provincial lumber sector, and for shipping to mills in Nova Scotia and New Brunswick. Part of this program should involve identification and replanting of abandoned or under-utilized farmland where soil capability allows. An additional benefit in this respect would be to deter soil erosion by offering shelter from wind and controlling surface-water run-off and ground water movement.

Identify Other Sylvicultural Opportunities A type of sylviculture with a more rapid return than conventional forestry involves Christmas-tree cultivation. This could be undertaken either as an adjunct to existing agricultural enterprises, or as a separate activity. There is a large market for trees in cities up and down the eastern United States.

The Constraints

The short- to medium-term development of economic forestry in Prince Edward Island is rather limited because of several factors:

- Most woodlots are in small privately-held properties, and access for economic harvesting to these woodlots is limited for reasons of fragmentation or indifference on the part of the owner. The farmers who own a large part of the resource regard it as a residual form of income to be used as insurance only when agricultural prices are low.

- The provincial forest was rather severely depleted in the second half of the nineteenth century, and regeneration has been unmanaged. Quality of wood reserves, therefore, is, at best, variable.

- Although there has been consideration of wood-fired thermal electrical generation on the Island, the energy content of wood relative to its bulk makes it generally uncompetitive even compared with expensive alternatives.

- The high bulk of wood makes it rather sensitive to transportation costs, particularly when there is no organized collection and transporation infrastructure.

6.4 CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS IN MANUFACTURING

The Challenge

There is one major challenge facing the Island manufacturing sector:

- To diversify the manufacturing base.

The Opportunities

Diversification of the manufacturing base can be in one or more of several directions:

- Expand existing industries to take advantage of new export markets as they arise, or as they are conceived.
- Diversify and integrate existing manufacturing plant to assure more year-round operation at the same time as introducing new lines. This would, for example, involve existing food processors investigating the potential of manufacturing simulated fish products to fill gaps in their schedule when flows of farm product inputs slow down.
- Diversify into new types of manufacturing, with high-value production suitable for export sales.

Several other processes must begin at the same time as diversification, and run simultaneously, or should precede expansion.

Investigate New Markets Expansion and diversification of the province's manufacturing base must be predicated on the basis of relatively assured markets for the new output. This may, in turn, dictate the type of production to be undertaken. For example, high-quality handcrafts or other household consumer products could be oriented much more effectively at the tourist trade with the intent, at least in part, of advertising by word-of-mouth in tourists' place of residence. Products may reflect some identity with the Island. A more concerted effort will be required to identify more distant export markets.

Increase Investment in Manufacturing Part of the reason that productivity in the Island manufacturing sector remains so low is that manufacturing investment per person is vastly below average national levels. Production from the province's factories remains low value and generally small-scale. Investment must increase to promote higher productivity, and also to begin a process of equity-building necessary to sustain further investment.

Improve Labour and Managerial Skills Low-value manufacturing production generally goes hand-in-hand with low levels of skills and depressed incomes. Increasing skill levels, both at shop floor and managerial levels, is a prerequisite to improving productivity and generally to fostering a higher-value manufacturing sector. Skill-training can take place either in the classroom, or on the job. Ideally, there will be a combination of the two.

Target New and Further Industries Perhaps more than for other parts of Prince Edward Island's economy, the lesson of the past cannot serve as guides for the future. In the first place, manufacturing development on the Island over the past two decades has not always survived or been sustained. In the second place, there is profound change in economic structures throughout the industrialized world which means that more areas than Prince Edward Island are examining potential directions for economic stimulus, and which give the Island something close to equal footing to take advantage of new developments. The orientation, therefore, must be into the future rather than into the past.

Opportunities in new industries usually involve advanced technologies, or accumulation, manipulation, and dissemination of information. The new technologies themselves will require new skills, and could conceivably benefit the Island in at least two ways:

- As a means of improving production for existing industries.
- As a new industry by itself, involved in both research and development, and in actual production and sales of technology or scientific commodities.

There are further aspects of this new wave of industrial development which offer the Island a chance to break with past practices in attracting new industries. More specifically:

- New technologies offer almost unprecedented scope for decentralization, as its adaptation to energy conservation, quality control, and production-line management tend to erode traditional reliances on economies of scale. Units of production may well be smaller, more flexible, and rely on raw material inputs from a smaller area.
- Products of high technology plants are usually high-value and more efficient in terms of energy, transportation, or

other costs. Although higher-cost in terms of such items as research and labour, this offers Prince Edward Island the opportunity to discount its already high transportation and energy costs, and to capitalize on development of human skills.

- High technology companies offer intriguing locational requirements, based more so than traditional industries on access to equity capital, or quality-of-life factors. The undoubted advantages of living in a community such as Prince Edward Island, with a great deal of natural physical charm and social cohesion, are supplemented by an accessibility to government which imparts more flexibility than most other locations for speedy decisions to facilitate production. This is a comparative advantage in that other parts of the world also offer equivalent attractions for industries but not the uniqueness of an Island location. New developments also put the Island in the rather unusual situation of being able to initiate imaginative promotional policies which stand a better chance of attracting new manufacturing industries than in the past.

Such ventures will still require a variable degree of risk-taking, and success is by no means assured. It is true, however, that a range of manufacturing opportunity exists in the 1980s which was not present on the Island in former years. A manufacturing sector based on smaller units of production would also complement a traditional provincial sense of scale and values much more closely than more traditional manufacturing enterprise.

The Constraints

There has been a general lack of entrepreneurial and managerial skills in the Island economy as perceived opportunities locally have been limited. Many innovative managers (or potential managers) have left to try their ideas out in practice elsewhere, and most of the skilled professional labour in Prince Edward Island tends to work for the public sector, or for certain components of the service sector. Efforts to attract skilled and experienced managers to establish manufacturing industries in the province have not been very successful, and most new plants which have begun operation have usually done so fortuitously. Industrial policy has been based on deterministic factors, such as natural economic or locational assets.

All these factors may have tended to foster a degree of inertia in the Island manufacturing sector, and in public or popular attitudes towards new industry, which may be difficult to arrest and redirect. There also remains rather intractable problems of low skill levels in the labour force, transportation problems, and electricity costs.

6.5 CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS IN SERVICES

The Challenge

The principal challenge in Prince Edward Island's service sector is:

- To promote further development of service industries, particularly higher-valued, business- and export-oriented services.

The Opportunities

Promote Professional, Business, and Export-Oriented Services
Economies which have made invisible exports (essentially exports of services) a major part of their trade have done so on the basis of very highly-valued, specialized knowledge or information. There are two ways that specialization in service provision on the Island should proceed:

- Acquisition of skills, information and knowledge from other parts of the industrialized world for provision to Island industry. This would, in the first place, assist the provincial economy to meet the challenges of industrial development, and in the second place, preclude an outflow of money to pay for similar services if supplied from away.

- Development of services based on Island skills, experience, knowledge, and initiative to sell in export markets.

The former of these is an essential part of overall development in Prince Edward Island, and includes such services as production engineering, computer application and advice, management consultancy, advertising, personnel consulting, and so on. Development of such services would naturally, at some stage, enter export markets as the Island's unique experiences accumulate.

The second group of services is equally important to establish a reputation in potential markets, and to generate export earnings. It would also be a sign of maturity in a service-dominated economy to diversify from the relatively low-value personal services which currently account for a large part of the provincial economy, and to begin to replace public administration and defence as the primary component of the service sector.

Specific opportunities could include:

- An Island Studies Institute to market the peculiar and unique skills in managing small, more or less autonomous administrations and economies.

- Agricultural, veterinary, and aquatic services which have developed (or will develop) around centres of higher learning and research. As the province is an Island, this is a great advantage in research and development on disease-free crops and plants. Establishment of advanced study and research at UPEI should be a great opportunity to expand all kinds of research of this nature.

- Research into old age, and caring for the elderly offers great potential. The province already possesses an excellent background for development of such a set of services: It has higher than average proportion of older people, who also tend to live longer; it has a well-developed network of integrated care facilities for the elderly in the form of the manor system; and it is the national head office for the Department of Veterans' Affairs, which encompasses advanced professional knowledge on aging.

The Constraints

- Poor and unreliable air transportation service with other major centres within Atlantic Canada and to other points is a big disadvantage, especially when they affect highly-paid, sophisticated entrepreneurs and executives.
- The province's telephone system is still based largely on party lines, which effectively prevents much dissemination or diffusion of modern electronic information technology.

6.6 CHALLENGES, OPPORTUNITIES, AND CONSTRAINTS IN TOURISM

The Challenges

The main challenges facing the Island's tourist sector are:

- To increase visitation.
- To increase visitor spending.
- To spread the benefits of tourist activity more evenly throughout the province.

The Opportunities

Extend The Tourist Season Prince Edward Island's peak tourist visitation at present is largely confined to the six weeks from early July to late August, coinciding with school holidays. There have been encouraging trends in recent years to extend this season and take fuller advantage of spring and fall visitation opportunities, and there have been attempts to increase winter visitation. The main potential, however, remains in stimulating tourism between mid-May and the end of June, and in September and October, the so-called "shoulder" seasons.

Expand And Diversify The Market Most visitors currently originate in other parts of eastern Canada and in the north-eastern United States. Expansion of market area outside these confines is limited, given competing attractions in other parts of North America; as most visitors are families with children under 15, effective market range must be within a drive of no more than two days. Market expansion, therefore, essentially translates into market diversification to attract visitors who do not fit the traditional family mould, and who would ideally be attracted to the shoulder periods. Examples are elderly people, childless couples, and higher-income singles.

Expand And Diversify Island Attractions There are two principal reasons for expanding and diversifying Island visitor attractions:

- A six-week summer season and a reliance on outdoor attractions mean that tourists are particularly vulnerable to extended periods of wet weather. Alternative, indoor attractions are a necessary complement to outdoor attractions.
- To increase visitation, particularly in non-traditional as well as traditional markets, will require more variety of attractions, lodging and eating places, and so on. A tourist sector geared to a fairly restricted market segment may be denying itself the means to increase visitation.

There are several specific directions of diversification, including adoption of themes (the Cradle of Confederation has been suggested as a generic theme for Prince Edward Island); specialist tourist packages, for example, aimed at sailing, golf, tuna-fishing, or the lucrative convention trade; and a much wider range of everyday attractions to offer alternatives to family visitors.

Improve Marketing As tourism expands during the balance of the century, it will also become very competitive. Rival tourist areas will vie for Prince Edward Island's traditional market, perhaps offering more exotic or cosmopolitan experiences. Marketing in such an atmosphere takes on great importance, and must become extremely sophisticated. This will involve a great degree of cooperation between all four provinces so that the entire region, with its correspondingly greatly increased variety of scenic attractions, can offer a greater diversity of tourist experiences.

Improve Transportation Links To And Within The Island Increased visitation, and increasingly sophisticated visitors, will tax a ferry service which is already strained. There will be some relief if the season is extended, and increased capacity utilization over a longer period allows consideration of capital improvements. Modernized facilities in Charlottetown Airport also need rapid completion if convention traffic is to be attracted. Perhaps more urgently, air service to and from the Island need substantial improvement, and many of the province's roads need upgrading. Further consideration of other alternatives may be required, including additional ferry services, and a fixed (causeway) crossing between the Island and New Brunswick.

Adopt A Regional Approach To Tourist Development The total tourist potential in Atlantic Canada is almost certainly greater than the sum of its individual parts. Combining the physical, cultural, and other man-made attractions of all four provinces offers a breathtaking variety of opportunities for tourists. In an expanding market, the important aspect of tourism development in the region is to emphasize this diversity within a relatively small area, and to promote the potential range of vacation experiences available for tourists. The sandy beaches of Prince Edward Island attract visitors from a fairly narrow market area. When combined to a wider variety of attractions in the other provinces, more people, from a greater range of social classes, are likely to travel greater distances to visit the region. All parts of the region would probably benefit from this increased visitation. An important first step in regional cooperation involves promotion.

The Constraints

The small units which characterize Island tourism are geared towards family-type vacations and will find it very difficult to adapt to serve a more diverse and, presumably, more discriminating market. Capital to finance such change will also be difficult to find, and entrepreneurial skills are limited. In addition, there is an inertia in the province's tourist industry which may amount to resistance to change. This, in turn, extends to mistrust of any cooperation between the provinces for fear of losing market shares at the provincial level.

To overcome these constraints will require considerable government involvement. This will also apply to wider constraints which affect transportation problems, both to and from the Island, and within it.

7. SOURCES

There are two principal groups of sources for this final report:

- A series of sectoral and thematic reports prepared as part of the overall project.
- Other relevant sources, consulted as appropriate as the final report was being written.

Sector reports in the first set were prepared for:

- Agriculture (by staff of the Prince Edward Island Department of Agriculture, and Agriculture Canada).
- The Fishery (by DPA Consulting, Ltd.).
- Manufacturing (by staff of the Prince Edward Island Department of Industry, and the Department of Regional Industrial Expansion).
- Services (by staff of the Ministry of State for Economic and Regional Development).
- Tourism (by staff of the Prince Edward Island Department of Finance and Tourism).

General and thematic reports were also prepared on:

- General Background to the Prince Edward Island Economy (by staff of the Prince Edward Island Department of Finance and Tourism).

- Human Resources (by staff of the Prince Edward Island Department of Labour, and the Canada Employment and Immigration Commission).

- Transportation (by staff of Transport Canada, in consultation with the Prince Edward Island Department of Transportation and Public Works).

- Technology and Development (by Philip A. Lapp, Ltd., Consultants, and staff of the Prince Edward Island Cabinet Office and the Ministry of State for Economic and Regional Development).

- Energy (by staff of the Prince Edward Island Department of Energy and Forestry, and Energy, Mines and Resources Canada).

- The Role of Government in Prince Edward Island (by DPA Consulting Ltd.).

- Experience From Previous Economic Development Efforts (by Mason Management, Consultants).

Additional analytical information was gleaned from:

- The Canada-Prince Edward Island Forest Resource Development Agreement (on Forestry).

- Several of the Economic Trends series issued by the Prince Edward Island Department of Finance and Tourism, including:
    - Aspects of Employment on Prince Edward Island During the 1970s (1984).
    - A Further Look at the 1981 Census Results (1983).
    - A First Look at the 1981 Census Results (1982).
    - The Industrial Composition of the Prince Edward Island Economy (1981).
    - The Growth of the Government Sector on Prince Edward Island (1981).
    - Transfer Payments in Prince Edward Island (1981).
    - Capital Flows and Stocks in Prince Edward Island (1980).

Supplementary statistical information was taken from various Statistics Canada publications, especially:

- Provincial Economic Accounts, Catalogue 13-213, up to 1981.
- Manufacturing Industries of Canada: National and Provincial Areas, Catalogue 31-203, up to 1981.
- The Labour Force, Catalogue 71-001, up to January, 1984.

Agricultural statistics were taken from:

- Agriculture Statistics, 1982, Prince Edward Island (published by authority of the Prince Edward Island Department of Agriculture).
- Selected Agricultural Statistics for Canada 1980 and 1982.

Both the above sources collated data from Statistics Canada, including the Census of Agriculture.

Other statistical data were derived from the publications of the Conference Board of Canada, particularly on national and provincial gross economic output.